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August 7th.

DR. HAYS in the Chair.

Thirteen members present.

The following papers were presented for publication : "Descriptions of new species of American Fresh-water Fishes, by Charles C. Abbott."

"Description of new species of North America Reptiles in the Museum of the Smithsonian Institution, Washington, D. C., by Robert Kennicott."

"Notes and Descriptions of new and little known American Reptiles by E. D. Cope."

And were referred to Committees.

The number of the Proceedings for July was laid on the table by the Committee.

August 14th.

DR. HAYS in the Chair.

Thirteen members present.

The following paper was presented for publication: "Contributions to American Lepidopterology, No. 6, by Brackenridge Clemens, M.D.,"

And was referred to a Committee.

August 28th.

Vice President BRIDGES in the Chair.

Twenty-two members present.

Dr. Fisher announced the death at New York, on the 17th inst. of Victor G. Audubon, a Correspondent of the Academy.

On report of the respective Committees, the following papers were ordered to be published in the Proceedings ;

Descriptions of new species of American Fresh-water Fishes.

BY CHARLES C. ABBOTT.

1. Plargyrus melanocephalus *Abbott.*—Head large, broad ; snout very blunt. Body broad anterior to dorsal fin, rapidly narrowing posteriorly ; dorsal outline greatly curved, making the depth of the body anterior to dorsal fin equal to one-fourth of total length. The eye large, circular ; diameter equal to one-third the width of head. The distance from the posterior margin of opercular apparatus to edge of the orbit, is double that from extremity of the snout to opposite edge of orbit. The nostrils, which have a double opening, are situated on a line with the upper edge of the orbits. The mouth is of medium size, terminal, the lower jaw the shorter. Small conical, acute cornua arranged on the snout, generally in parallel rows ; a few on the lower jaw, irregularly placed. The lateral line, commencing at angle of operculum, is greatly decurved, approaching nearer the ventral than dorsal outline, posteriorly. The anterior ray of the ventral fin directly opposite that of the ventral fin, each ray being equidistant from the snout and base of caudal fin. The tips of the rays of the ventral somewhat overlap the anus. The dorsal fin is higher than broad, quadrangular ; caudal fin is slightly bifurcated ;

pectorals long, narrow and subquadrangular, the ventrals long, narrow and tapering; anal twice as long as broad, quadrangular.

The fin-rays are—D, 9. C, 20 $\frac{7}{7}$ P, 14. V, 8. A, 7.

Color. In alcoholic specimens, the whole head, posteriorly to the nape of the neck, inky black. The opercle occasionally with a metallic reflection. A black narrow band extends from opercle to caudal fin, above lateral line anterior and below, posterior to dorsal fin. Body of a general gray hue, darker on the back, and yellowish on the belly. A narrow black line on peduncle of tail.

Total length $2\frac{3}{8}$ inches.

The specimens from which the description is taken, were procured by Dr. J. H. Slack, of Philadelphia, in June, 1860, at Lake Whittlesey, Minnesota. From the number of specimens obtained, it is natural to suppose that it is, in that district at least, a very numerous species.

2. Cottus Copei *Abbott.*—Body subcylindrical; its greatest depth is contained six times in the entire length from snout to tip of caudal fin; and the least depth, at insertion of caudal fin, is contained thirteen times in the entire length. Head twice as broad as deep, with its frontal length equal to its width. The snout is obtuse. A vertical line drawn upwards, from the angle of the mouth would pass anterior to the pupil. The eyes are circular, medium sized, and the diameter is contained little more than four times in the length of the head. The preopercular spine is strongly developed, curving slightly upwards. A small acute spine on the subopercle. The gill openings are oblique, large and separated under the throat by an isthmus of three-eighths of an inch. The lateral line is distinct throughout its course; it is concurrent with the dorsal outline. The first ray of the dorsal is inserted fifteen-sixteenths of an inch from the extremity of the snout, and extends on a basis of one-third of an inch; the origin of second dorsal is posterior to the vent, the first and last rays shorter than the middle ones. The commencement of anal fin is opposite the third ray of dorsal. The caudal fin is rounded posteriorly, and is contained six times in the entire length; the middle rays are bifurcated. The ventrals are inserted in a line with the centre of the insertion of pectorals; the tips of rays do not reach the anus, if bent backward. The bases of the pectorals are crescent shaped, and the tips of the rays, if bended backward, will reach the first ray of second dorsal, but not the anal fin.

The number of fin rays are D, 7—15. P, 12. V, 8. C, 14. A, 10.

Color. Head and back of a varied blackish-gray, with minute yellow spots; sides yellowish-gray, fading to pearly white on the belly; sides marked with very irregular dark gray lines. The fins partaking the color of the region to which they belong, are sparingly dotted with deep black. Iris bronze.—Total length $3\frac{3}{8}$ inches.

Habitat. A small trout stream, a tributary of a tributary of Brandywine creek, Chester Co., Pennsylvania. But one adult and one young specimen captured.

I dedicate, with much pleasure, this beautiful Cottus, to Mr. E. D. Cope, of Philadelphia, by whom it was found, and kindly loaned me for description.

PŒCILOSOMA, Agass.

Gen. Char.—Head short and strong, rounded. Mouth little opened, proportionately broad; it is not protractile, though the maxillary bone be moveable; opercular apparatus scaly; cheeks bare.

3. P. transversum *Abbott.*—Head and body compressed; nose acute. Operculum terminating in a spine posteriorly. Jaws equal; mouth broad. Margin of jaws armed with very numerous, small, inwardly curved, sharp teeth. The origin of the first dorsal fin is posterior to the insertion of pectoral

fin; the ventral is also posterior to the pectoral, and is slightly anterior to the first ray of dorsal. The origin of the second dorsal is situated slightly posteriorly to the vent, and directly opposite the origin of the anal; the terminal ray of the anal is anterior to the terminal ray of second dorsal. The caudal fin is slightly rounded.

The numbers of the fin rays, are D; 11—12. C, $16\frac{5}{5}$ A, 9. V, 6. P, 11.

Total length.—2 inches.

Color. In alcoholic specimens, the general tint of the body is sienna, fading into pale straw color upon the belly; throat orange; pectoral and ventral fins orange; the other fins partake of the color of the region to which they belong. Fourteen bands of dark rufous, joined upon the back, cross the sides transversely, and become obliterated upon the belly; the intervening spaces are double the width of the bands.

Habitat.—Cabinet of Academy ? Lake Superior.

A few specimens of this fish, with specimens also of a new species of Pileoma *DeKay*, were presented by W. A. Hammond, M. D., to the Academy; but the locality and date of presentation have been lost, and no mention of the fish being presented is made in the "Proceedings." The only other described representative of this genus is the P. zebra *Agassiz*, described in his work on Lake Superior, as a fish of those waters. This new species may be from the same locality, but at present there is no means of positively ascertaining.

4. Pileoma cymatogramma *Abbott.*—Body cylindrical, slightly depressed. Head small, facial outline oblique; mouth rather large. The eye is situated near the top of the head, with the diameter of the orbit equal to one-third of the length of the head. The operculum terminates posteriorly in a broad flat point; the preopercle terminates posteriorly in a small, very acute and conical spine. The lateral line is nearly straight throughout its course. The insertion of the pectoral fin is anterior to that of the ventral, and that of the ventral anterior to the origin of dorsal. The origin of the second dorsal is opposite the primary ray of the anal fin. The caudal is slightly bifurcated.

The numbers of the fin rays are D, 13—12. C. $16\frac{4}{4}$ P, 13. V, 7. A, 8.

Color. In alcohol specimens, the general color of the upper surface, light rufous, fading on the belly. A broad, wavy band, mostly below the lateral line, of dark rufous-brown. Numerous quadrangular, dark rufous spots on the back and sides above the lateral line.

Habitat.—Cabinet of the Academy.

This genus differs principally from Pœcilosoma, in having the cheeks and opercular apparatus, *both* scaly.

5. Ammocœtes aepyptera *Abbott.*—Body posterior to second branchial aperture, compressed and tapering rapidly towards the tail; belly, anterior to the vent, flattened. The first dorsal fin arises somewhat posteriorly to the centre of the entire length of the body, and is pyramidal in figure. The second dorsal fin, joining with the caudal, is smaller than the first dorsal and more acutely pyramidal in its figure. The caudal, whose origin is situated opposite the vent, is higher than either dorsal fin, and decreases rapidly towards the tail. Nape of the neck much elevated, and the facial outline obliquely descending. Snout exceedingly prolonged; mouth circular; on the inside of the upper lip there are three or four very small granules on each side; and at the opening of the throat small ramified papillæ. The eyes are very small and situated near the top of the head, equidistant between the first branchial aperture and the angle of the mouth. The branchial apertures

are situated in a longitudinal depression, oblique and slightly curved; the first aperture is situated in a line with the pupil, and is one-fifth of an inch distant posteriorly.

Total length, 5½ inches.

Color. In the alcoholic specimen, the head, back and sides are dark brown; the belly, clay color. Fins yellow.

Habitat. Ohio River.

A single specimen of this new species of *Ammocœtes*, is in the cabinet of the Academy, marked as procured in the Ohio River, and presented by Dr. Hildreth. The peculiarities of the species are to be noticed in the remarkable length of the head, and distance from the orbit to the first branchial aperture, and also in the unusual size of the dorsal and caudal fins; from which last peculiarity the specific name is derived.

Descriptions of New Species of North American Serpents in the Museum of the Smithsonian Institution, Washington.

BY ROBERT KENNICOTT.

TANTILLA Baird & Girard.

T. NIGRICEPS Kennicott.

Specific character. Form more slender and head narrower than in T. gracilis. Vertical plate more elongate posteriorly, occipitals narrower. One anteorbital, two postorbitals. Seven upper labials. Color (in alcohol) uniform brownish white above, lighter beneath. Crown as far as behind the occipitals deep black; no indication of a post-occipital black ring as in T. coronata.

4491, Fort Bliss, New Mexico. Dr. Crawford.

2046, Indianola to Nueces, Texas. Capt. Pope.

DIADOPHIS Baird & Girard.

D. TEXENSIS Kennicott.

Spec. char. Dorsal scales in fifteen longitudinal rows. Color above uniform leaden or bluish black; beneath light yellow, irregularly spotted with black. Under jaws spotted. A yellowish occipital ring one and a half or two scales wide.

Descr. Form moderately slender. Head rather narrow, with the crown slightly arched; snout narrow and depressed. Vertical plate small, tapering posteriorly; superior labials seven. Eye proportionally large. Outer row of dorsal scales slightly the largest. Color above leaden or bluish black, the crown darker. As in D. punctatus, the edges of the upper labial shields are yellow, like the lower, but the latter are thickly spotted with black. The abdomen is usually irregularly spotted with black over its whole surface, though in some specimens there is a tendency to form a medial row as in D. punctatus. The under surface of the tail is tinged with reddish.

1897, East of Galveston, Texas. Prof. Andrews.

2076, Head of Trinity River, Texas. Capt. Pope.

2079, Llano Estacado. Capt. Pope.

2155, Monticello, Mississippi. Miss H. Tennison.

This will be distinguished from D. punctatus by its more slender form, arched crown and narrow snout, by the numerous and irregular spots on the abdomen, and especially those on the mandibular and mental plates.

LAMPROPELTIS Fitzinger.

L. MULTISTRIATA Kennicott.

Sp. char. Dorsal scales in twenty-three rows. Form similar to that of L.

gentilis, but the head and eye larger. Color above brownish red, with thirty-one pairs of narrow black half-rings enclosing white spaces, from head to anus. The black rings not extending across the abdomen, which is uniform yellowish white. Head black above.

Descr. Snout broader and more depressed than in L. gentilis. It is also more elongate, and hence, also, the loreal and nasal plates ; in the only specimen examined the second superior labial plate is replaced by two smaller ones, thus increasing the number to eight, a peculiarity probably abnormal, as all the other species of the genus have seven. The body above is brownish red in spirits, crossed by thirty-one pairs of black rings from head to anus. The enclosed white spaces are one and a half scales wide on the central fifteen dorsal rows, and begin to widen abruptly on the fourth lateral row on each side, extending over three or four scales longitudinally on the first row. On the sides they are punctulated with black as in L. gentilis. The occipital white ring is much broader. The black rings are each two scales wide on the vertebral region, narrowing to less than one scale laterally. On the fourth lateral row the two rings of each pair begin to diverge, the anterior uniting on the edge of the abdomen with the posterior ring of the pair in advance, the posterior becoming confluent with the anterior of the succeeding pair. Thus the ground color is enclosed in the form of a transverse elliptical spot. Upon the middle of the body these spots are two or three scales wide on the vertebral region, four or five on the sides, and but one on the first row of scales. Anteriorly the red intervals are greater ; posteriorly they narrow slightly, but toward the tip of the tail they are entirely lost, as in L. doliatus and gentilis, by the confluence of the black rings. The black rings extend but a short distance upon the abdominal scuta, leaving the abdomen destitute of blotches, though it is faintly and sparsely punctulated. The chin and inferior labials are tinged with brown. The top of the head is black as in L. gentilis.

No. 1842, Fort Lookout, Nebraska. Lieut. Warren and Dr. Hayden.

The number of rows of scales and the more numerous rings will distinguish this species from L. annulatus, and those above compared with it.

L. ANNULATA Kennicott.

Spec. char. Form stout, head broad, eye small. Scales short and broad. Color bright red, with eighteen to twenty-two pairs of black rings from head to anus, each pair enclosing an immaculate yellow ring which completely encircles the body, widening but little upon the flanks. Abdomen between the yellow rings black. Top of head entirely black, this color extending posteriorly upon the occipitals in an acute angle. A broad occipital yellow ring.

Descr. General appearance similar to L. gentilis. The form is stouter, the head shorter, broader and more depressed, and the eye smaller. The dorsal scales are very different, being much broader; the lateral rows in L. annulatus, are higher than long, and those of the central are nearly as wide as long. In L. gentilis, those of the lateral rows are considerably longer than high, and those of the central nearly twice as long as wide. There are twenty pairs of black rings from head to vent, which do not diverge on the sides ; each ring covering two to two and a half scales longitudinally on the vertebral region and narrowing but little laterally. The enclosed yellow rings are one and a half scales wide on the vertebral region. The first three pairs of black rings behind the head are, with those enclosed, a little wider. The intervals of red ground-color occupy four or five scales on the middle of the body, and one or two more anteriorly and posteriorly. The yellow rings are of nearly uniform width, and completely surround the body. The spaces between them on the abdomen are black. There are no black spots upon the body.

Type No. 4293, Matamoras, Mexico. Lieut. Couch.

425, Mexico. Paris Museum.

A small specimen from Brownsville, Texas, (No. 1855), with twenty-one pairs of black rings from head to anus, has the yellow rings rather wider on the abdomen, though not two scales wide on the first dorsal row,—and the black rings distinct; the enclosed abdominal intervals are only black along the middle. Otherwise similar to the above.

SCOTOPHIS Baird & Girard.

S. OBSOLETUS Kennicott. *Coluber obsoletus* Say, in Long's Exped. Rocky Mountains, i. p. 140, 1823; not *Coluber obsoletus* "Say," Holbrook, Am. Herp. iii. 1842, p. 61.

Spec. char. Head broad behind, tapering anteriorly, snout more pointed than in S. Allegheniensis. Head much more elevated anteriorly. Nasals, loral, anteorbital, and anterior upper labials elevated. Vertical large anteriorly, nearly as broad as long. Superciliaries and occipitals large. Scales in twenty-five or seven rows, the central ones moderately carinated. Color above entirely black, with a slight bluish olive tinge. Upon stretching the skin, the spaces between the scales seem to be red. Abdomen light bluish slate posteriorly; anteriorly, yellowish, clouded with bluish slate, lighter than in S. Allegheniensis.

Descr. This species resembles S. Allegheniensis very closely, rendering a comparative description necessary. Head broad behind, more elongate and elevated in front than in S. Allegheniensis, hence the occipitals are larger, and the nasals, loral, preocular, and anterior upper labials are more elevated. The anterior frontals are smaller, though the external posterior angles are more elongated; the anteorbital is narrower. Posterior orbitals rather larger; vertical large, anterior breadth nearly equal to the length. Four or five external rows of scales smooth, the first largest, with the scales less obtuse than in S. Allegheniensis. The head and entire upper parts are uniform black, not pitchy as in S. Allegheniensis, but with a slight tinge of olivaceous or brown. Upon stretching the skin the spaces between the scales and sometimes the covered bases of the latter are seen to be of a bright reddish brown on the sides, and in bars across the back, enclosing a vertebral series of pure black spaces which are analogous to the dorsal spots sometimes seen in S. Allegheniensis. No trace of these markings is to be seen in our specimens of the present species without stretching the skin, though one of them is but about three feet in length.

The abdomen is much lighter than in S. Allegheniensis; the posterior space occupied by the light bluish slate color is less. Along the middle third it is yellowish, heavily clouded with bluish slate, and anteriorly it is yellow, with irregular clouded spots of bluish slate along the sides. These anterior markings are much smaller than in Allegheniensis, and never in large square blotches as in that species.

Though so closely allied to Allegheniensis as not to be readily distinguished by absolute characters, except in the red spaces between the scales, the differences in the form of the head, and generally lighter colors, will be apparent at once upon comparison.

Independence, Mo. Dr. J. G. Cooper.

EUTÆNIA Baird & Girard.

E. MEGALOPS Kennicott.

Spec. char. Form shorter and stouter, with proportionally shorter tail than in E. proxima, which this species resembles. Tail one-fourth of the total length. Eye very large, greater than in E. proxima. First dorsal row of scales broader, each scale as high as long, and less strongly carinate. Dorsal stripe narrow, covering one and less than two half rows of scales. Color uniform brownish ash, with the three longitudinal stripes whitish yellow. Head olive ash.

Descr. Color uniform dull brownish ash or clay color, with the dorsal and lateral stripes whitish yellow. A few of the scales have narrow black spots on their edges, but these are not prominent, and never extend over a scale, appearing as indistinct mottlings of black on the ground color, always on the rows next the stripes. The head above is light olive ash. The lateral stripe is on the third and fourth rows, and is narrower than in E. proxima, covering rather less than two half scales. The color below the lateral stripe is a little lighter than that of the back. The exterior dorsal row is much wider than in any of the allied species, each scale being as high as long. The second row is much narrower, though a little wider than the third. The eye is strikingly large, and the superciliaries are raised, rendering the fore part of the crown an inclined plane, yet the muzzle is higher than in E. proxima.

No. 965, Tucson and St. Magdalena, 160, 86, 21, 24, 6. Major Emory. A. Schott.

E. MACROSTEMMA Kennicott.

Spec. char. Twenty-one rows of scales. Body rather stout. Head small, narrow posteriorly. Vertical plate much elongated, twice as long as wide. Eight upper labials, sixth largest, seventh sometimes equal. All the dorsal scales broad and short, first row largest, its scales as high as long and slightly carinate; second smaller, but much broader than the third. Ground color above very dull yellowish brown. Dorsal stripe broad, light brownish, but little lighter than the ground color, and with an indistinct black border. Lateral stripe on the fourth and part of the third row, indistinct, dull yellowish green. Two series of indistinct broken spots along the second and sixth rows.

Descr. The dorsal stripe is broad and regular, covering nearly three rows, but is dull and indistinct. On each side of it for one and a half scales there is a rather indistinct black border, somewhat as in E. ordinoides. Below this to the fourth row the color is dull greenish brown. On the fifth and sixth rows there is a series of indistinct black spots, each covering three scales, whose keels are of the ground color. This is also the case with the scales in the black border of the dorsal stripe. The lateral spots are one and a half scales wide, and separated by spaces of the same width. The third and fourth rows, particularly the fourth, are lighter, and of a yellowish green or olive color; the first and second and lower edge of third being a little darker, sufficiently define the lateral stripe. On about every other scale of the second row is a series of broken and irregular black spots, formed by the black margin of each side of the scales; extremely slight as to the contiguous scales. Each abdominal scutum is distinctly edged with black anteriorly, (of course concealed by the incumbent scutum), and some are tipped with black at their extremities, otherwise the abdomen is immaculate. In one specimen it is uniform dark green; in another, uniform yellowish green. The head is dark brown above, the superior labials but little lighter, and narrowly bordered with black posteriorly.

One specimen, upon the removal of the epidermis, appears entirely of a pale creamy yellow throughout, but with the black markings, including the border of the dorsal stripe, very distinct. Another specimen is green instead of whitish yellow.

City of Mexico. Maj. W. Rich.

This is a very well marked species, and readily distinguished. In color it bears some resemblance to some varieties of E. ordinoides and dorsalis, but it belongs to a different section of the genus, as indicated by the position of the lateral stripe. It is otherwise different from E. ordinoides, in having a very much smaller head and larger vertical plate, the dorsal scales wider, and the stripe more indistinct. From E. Marciana it differs in its very much smaller head and longer vertical plate, in its broader dorsal band, bordered by a stripe instead of a row of spots, and in the absence of the post oral crescentic patch, and broad black borders of upper labials.

E. Hammondii Kennicott.

Spec. char. Twenty-one rows of scales. Form rather slender; head long, narrow posteriorly; snout elongate and narrow, but rather obtuse. Postorbitals three, the upper much the largest. Eight upper labials, sixth largest; its postero-inferior angle much elongated. No dorsal stripe; lateral stripe olive yellow on the second and third rows. Back uniform dark olive brown or blackish, without distinct spots. Abdomen whitish olive, lighter anteriorly, and a dark line along the middle posteriorly.

Descr. Form rather slender, the tail about one-fourth the total length. Head very narrow and much elongated; the snout very narrow, but rather obtuse. The back above the third row of scales is very dark uniform olive brown without spot or band, except a light medial line extending about an inch back of the head. Lateral stripe light olivaceous yellow; first row of scales a little darker, and similar to the abdomen, being of a very dull whitish olive. Bases of the scales of the first row black; bases of abdominal scutes the same, the color broader toward their extremities, and generally concealed by the incumbent scute. A narrow slate-colored line along the middle of the abdomen posteriorly. Head above dark olive; superior labials very light olive yellow, margined with black posteriorly, excepting the eighth. This is black anteriorly, its posterior end being occupied by a yellowish patch which is confluent with the yellow of the neck. Lower postorbitals yellow. Two small yellow occipital dots, and a small yellow dot on each side of the posterior part of the vertical plate; these sometimes absent.

Young specimens, and older ones, after the removal of the epidermis, exhibit faint indications of a very narrow dorsal stripe upon a single row of scales, but in one there is no trace of this, even upon the neck, where it is usually visible These specimens also exhibit traces of two series of large alternating spots, which present somewhat the appearance of a zigzag line. In a young specimen there is a distinct series of spots on the first dorsal row, each spot covering one scale, and separated from those adjacent by two scales. Only one specimen is without the dark line upon the abdomen posteriorly. There are no irregular black blotches upon the abdomen as in E. angustirostris.

San Diego. Dr. J. F. Hammond.
Fort Tejon. J. Xantus.

This species is strongly marked, and will hardly be confounded with any at present known. It resembles most nearly E. angustirostris, under the head of which species the comparative differences are given in full. Two young specimens labelled by Dr. Hallowell "Tropidonotus ordinatus," belong here. Eutænia ordinata has a stouter body and head, and more pointed snout. There are nineteen dorsal rows, and a very different system of coloration.

E. angustirostris Kennicott.

Spec. char. Body moderately stout; tail less than one-fourth the total length, and very small. Head exceedingly elongated and narrow, more so than any other of the genus; snout very long, narrow and pointed. Crown plane above; eye large. Upper labials eight, sixth largest, seventh scarcely smaller. Dorsal rows twenty-one; outer row large, very faintly carinated, the second smaller but broader than the third; the next rather large and elongated, and strongly carinated. Dorsal stripe narrow, very indistinct. An indistinct, dull whitish lateral stripe on the second and third rows. Above the lateral stripes dark olive brown or black. Abdomen dark ashy olive or black.

Descr. The back above the third row of scales is dark olive brown without spots, but with each scale bordered with darker. The scales of the second and third rows are greyish olive, with distinct yellow borders. The first row and abdomen are ashy olive, with irregular heavy black blotches upon the latter, more numerous along the middle third, but offering no indication of a narrow black line as in E. Hammondii. On the first three rows some scattered scales have black spots on their bases and edges. Head above dark olive ; upper labials light olive with vertical black edgings.

A young specimen is entirely black: the dorsal stripe obsolete, being indicated only by a faint line on a single row of scales ; the lateral stripes very indistinct ; the first and part of the second row of scales entirely black. A whitish line along each side of the abdomen formed by a white spot at the end of each scute. These are also margined posteriorly with the same color. Throat whitish.

The remarkable elongation of the snout will distinguish this species from any others at present known, excepting E. leptocephala and Hammondii, from which it differs in other respects. The snout is more elongated, and decidedly more pointed than in either ; the head is not at all depressed anteriorly as in E. leptocephala, and the eye is strikingly larger. The colors of the back and abdomen are darker, and the rows of scales are twenty-one, not nineteen. As compared with E. Hammondii, which it most nearly resembles, beside the difference in the form of the snout, the head is depressed posteriorly (not anteriorly); hence the crown is quite plane throughout, while in E. Hammondii the crown is somewhat arched,—this form being more observable upon the occipital and frontal (vertical) region. In angustirostris the general form is stouter, while the head is longer, and hence a greater elongation of the vertical and frontal plates. The scales of the upper rows are also larger and more elongated, and more strongly carinate. The tail is shorter, being considerably less than one-fourth the total length, while in Hammondii it is fully or more than one-fourth. This member is also very slender, the body tapering abruptly near the anus in the former species. The dorsal stripe, though narrow, is not wanting, and the abdomen is much darker, being ashy olive with heavy black blotches throughout instead of light yellow or greyish olive, and there is no indication of the central line. The young black specimen is strikingly different from the young of E. Hammondii.

Parras, Coahuila, Mexico. Lieut. Couch.

E. CYRTOPSIS Kennicott.

Spec. char. Form very slender, but little stouter than that of E. saurita, but with shorter tail, one-fourth the total length. Head large. Eye very large. Superior labials eight, sixth and seventh largest. Three postorbitals, upper much the largest. Scales in nineteen rows. Color above olive brown, with two alternating series of elongated spots between the stripes, giving the appearance of a zigzag line. Dorsal stripe whitish, narrow, distinct to the tip of the tail. Lateral stripe on the second and third rows, of the same color, broad, distinct from head to anus. A series of black spots on the first dorsal row: abdomen uniform greenish white. Orbitals whitish; occipital spots obsolete.

Descr. This species somewhat resembles E. Marciana in the pattern of coloration, which, however, has the lateral stripe upon the third row only, instead of the third and second. The difference in form is most striking, the body being almost as slender as in E. saurita. The scales are rather larger than in E. Marciana, and those of the first row more elongated. The ground color above the lateral stripe is olive brown; the first dorsal row is whitish olive or greenish white. The abdomen is uniform greenish white, except a small black marginal spot near the extremity of each abdominal scute. The whitish dorsal row occupies one, and less than two half rows of scales, and is encroached upon by the black dorsal blotches which sometimes reach the central row. The lateral stripe is also encroached upon by the spots above and below it, though never entirely interrupted by them near the head as in E. Marciana. The head is dark olive above ; labials margined vertically with black, somewhat as in E. Marciana, except the seventh plate, which in the former is heavily bordered with black on both edges; in the latter, slightly upon the anterior edge alone. There is a vertical light patch at the angle of the mouth crossing the posterior upper labial, and confluent with the white of the neck, and not distinct and crescent-shaped as in Marciana. Behind the occipital plates is a very large double black blotch. Behind this there are three or four perfect square blotches extending quite from the dorsal to the lateral stripe, each three scales in length, and separated by intervals of about two scales wide. Behind these the general pattern of spots is seen; it consists of two series of large oblong rhomboidal alternating spots, each about four scales long, and somewhat confluent with each other at the adjacent corners, giving the appearance of a zigzag line upon each side. On the first and second dorsal rows is a third series of very distinct black spots, each on parts of three scales, and the extremities of two abdominal scutes. The intervening spaces of greenish white ground color are equal in width to the spots.

No. 930, Rinconada Coahuila, Mexico, 179; 90, 19, 24$\frac{5}{8}$, 6. Lieut. Couch.
Durango, Lieut. Couch.
Gila River. Dr. Webb.

Other specimens have the dorsal stripe on a single row of scales, and the lateral stripe has its upper border regular and distinct, without interruption from the middle series of spots, the lower edges of which reach only the upper edge of the third row instead of the lower edge as in the specimen above described. Instead of the distinct spots upon the first and second rows in that specimen, they are here broken up into black borders of three approximated scales. In the only large specimen of this variety, the keels of the first dorsal row are not parallel to those of the rows above, being directed obliquely downward and backward, so that the posterior end of one keel falls below the anterior end of the next succeeding, instead of forming a continuous line. The nose of this specimen is also more pointed than in the typical one.

REGINA Baird & Girard.

R. VALIDA Kennicott.

Spec. char. Body stout for the genus; head large, short but high; broad posteriorly. Snout elongated, narrow and pointed. Rostral as high as broad, subpentagonal, the apex pointed. Vertical very narrow, obtusely pointed posteriorly: occipitals small. Nineteen rows of scales, all carinated; the exterior very feebly. Light brownish ash above, with faint black markings upon the bases of the scales of the first, fourth and eighth rows of scales. Abdomen entirely uniform yellowish.

Descr. The body is stout for the genus, with the tail rather short. The head is very large and proportionally stout. It is very broad and high posteriorly, and tapers regularly to the snout, which is rather narrow, elongated, and pointed. Crown flattened as in other species of the genus. Snout elevated, rostral plate as high as wide, subpentagonal, and with the elongated apex pointed. Loral nearly as high as long. Anterior frontals triangular, elongated. Vertical very narrow, not widening anteriorly, the posterior point very obtuse and scarcely triangular. Superciliaries proportionally wide, and occipitals small. There is one rather large anteorbital, and two large postorbitals on one side, and three on the other, (which may possibly be the normal number). Upper labials large, sixth and seventh largest, eighth (the last) smaller. Inferior labials ten, sixth longest.

The dorsal rows are nineteen, all carinated, the outer row very slightly. The scales of the first row are much the largest; all the rest about equal.

The color above is entirely uniform light brownish ash, (clay color beneath the epidermis), with about every alternate scale on the fourth and fifth rows marked with black on each side near its base. Posteriorly the scales of the first row are faintly marked with black at their bases. These black markings are not prominent, and only perceptible upon close examination. The head, including the upper labials and rostral, has more of an olivaceous cast. The abdomen is entirely uniform pale greyish yellow, the tips of the scutella being, however, tinged with the ashy brown color of the back.

1309, Durango, Mexico. Lieut. Couch.

In its general aspect this species bears considerable resemblance to Nerodia erythrogaster, from which, however, it is, upon critical examination, at once distinguished by the number of dorsal rows and other generic characters. It will, perhaps, be found that the faint black markings on the first, fourth and eighth rows are the remaining indications of faded stripes.

NERODIA Baird & Girard.

N. Couchii Kennicott.

Spec. char. Resembles N. erythrogaster, but the head is shorter and very broad; the muzzle broad and obtuse. Postorbitals three, much larger than in N. erythrogaster, the lower extending forward beyond the middle of the eye. Eight upper labials, all large, the seventh much larger than in N. erythrogaster; the dorsal scales are broader and less strongly keeled, and in twenty-three rows. Uniform dull light slaty brown above, paler than erythrogaster.

Descr. The head is short, but very broad and deep posteriorly; the nose is broad and obtuse. The outline presented by the head is subovoid, not regularly tapering from the angle of the jaws to the snout as in N. erythrogaster. The prefontals are rather shorter than in that species. The postorbitals are very large, three in number, the lower one elongated forward to beyond the middle of the orbit. The color above is entirely uniform dull light slaty brown, lighter than in the lightest varieties of the erythrogaster. The abdomen in both specimens examined is uniform brownish white. Upon stretching the skin of one specimen, traces of the usual white transverse lines are seen between the scales. The young are probably marked somewhat as in N. erythrogaster.

No. 1319, San Diego, New Leon. 143+1, 71, 23, 37¾, 9¾. Lieut. Couch.

No. 1314, Santa Caterina, New Leon. 143+1, 86, 23, 26⅞, 9¼. Lieut. Couch.

This species very closely resembles N. erythrogaster, but can be distinguished upon comparison by the lighter color, broader and shorter head, and by the larger postorbitals and anterior position of the lowest. From N. Woodhousei it differs in its uniform color, its much broader and shorter head, etc.

N. compressicauda Kennicott.

Spec. char. Body stout. Form triangular, much compressed toward the tail, where it is considerably higher than broad. Head elongated, rather narrow, but very deep. Plates of the crown large; vertical short, very broad; loral small; three postorbitals, upper and lower small, but the central with its lower posterior angle prolonged to the labials. Twenty-one dorsal rows of scales, all carinate, in form rather wide; those of the first rows proportionally small. Ground color yellowish olive; four black stripes on the neck; behind this zigzag transverse black bands, which do not taper on the sides. Posteriorly these bands break into three series of spots symmetrically arranged, not alternating.

Descr. Body rather stouter than that of N. Sipedon, and presenting a subtriangular form. This is most evident posteriorly, where, and on the tail, the height is much greater than the transverse diameter. The tail is very large at the base as in N. rhombifer, and does not taper from the anus, but narrows abruptly at one-third its length from the base. Dorsal rows twenty-one, all distinctly carinate. The scales are rather broad, and much rounded posteriorly, those of the first dorsal row disproportionately small. The head is elongate and rather narrow posteriorly, but very deep and but little depressed on the snout. All the plates of the crown are large; the vertical very broad and short, the loral longer than high, the upper and lower postorbitals small, but the central elongated so as to reach the labial plates.

In pattern of coloration and structure, this species departs somewhat from the usual style of the genus. The ground color is light olive brown, crossed on the anterior half of the body by waving or somewhat zigzag transverse black bands, covering two or three scales longitudinally, and separated by intervals of one or two scales. These bands do not taper regularly on the sides as in N. sipedon, but are constricted upon about the sixth row on each side, but are as wide upon the third, as on the vertebral row. Posteriorly these bands become narrower, and finally break up into a dorsal series of vertically elongated spots, and a lateral series of small circular ones, which do not alternate with the dorsal series as in N. sipedon, taxispilotus and others. For two inches behind the head, the transverse bands are replaced by four distinct longitudinal black lines, the lateral ones each covering the third, fourth, and part of the second rows, the upper ones covering the seventh, eighth, ninth and part of the tenth rows; these black lines are separated by a little over one scale of ground color. None of the black markings involve the first dorsalrow, which is yellowish olive, excepting some irregular dark mottlings. The head is yellowish olive, with the middle of the occipitals and verticals black, and a black patch extending from the eye back above the labials. The rostral is yellow, distinctly margined above with black. All the labials above and below, and the inframaxiliary plates are yellow, prominently margined with black. The abdomen is yellow, with two lines of black blotches.

1348, Tampa Bay, Florida. Mr. D. Welch.

HETERODON Pal. de Beauvois.

H. Kennerlyi Kennicott.

Spec. char. Head broad, very short anteriorly. Rostral plate very large. Loral plate very small, sometimes absent. Only two supplemental plates behind the azygas; the latter is sometimes replaced by two symmetrical contiguous plates, and without any supplemental. The prenasal and prefontal in contact with the posterior process of the rostral. Dorsal row of scales twenty-three, all carinated except the first and second, which are perfectly smooth. Ground color light yellowish grey; a dorsal series of rather indistinct rounded or subquadrate brown blotches; a second series of smaller circular spots, much darker and more distinct; below this a third, and more indistinct series.

Descr. In its general form and appearance this resembles the H. nasicus, with which it is sometimes found associated. The body, however, is rather shorter and thicker than in H. nasicus, and the head is broader with the part of the head anterior to the eye decidedly shorter. The nasals are not as well developed longitudinally as in H. nasicus, but the result of this shortness of the anterior part of the head is seen in the very small loral which is frequently wanting entirely. There is never more than one loral while frequently two are seen in H. nasicus, in which the loral is in every case strikingly larger than in Kennerlyii. The most striking difference between these species is in the number of small plates surrounding the azygos, or postrostral. While in H. nasicus there are always at least ten of these, one or two of which margin the inner edges of the prenasals and prefrontals, there are never more than two, and frequently but one additional plate in H. Kennerlyii, and the prenasal and prefrontal are always in contact with the posterior process of the rostral. The azygos is short, nearly as broad as long, and usually there are just behind it two contiguous plates of about the same size separating it from the postfrontal, but not from the prefrontal. Frequently, however, the azygos is longitudinally divided and without any additional plates, but in contact with the rostral anteriorly, and the verticai posteriorly, and not separated from the postfrontals. The vertical, occipitals, superciliaries and labials are much as in H. nasicus, though generally less developed longitudinally. The rostral is as large as in H. nasicus. The two outer dorsal rows are both perfectly smooth; in H. nasicus, the second is distinctly though delicately carinate.

The ground color is light yellowish gray, with a dorsal series of rather indistinct subquadrate or rounded blotches, two to two and a half scales long, and separated by intervals of one or two scales, rather wider anteriorly. Below this is a series of very distinct purplish black circular blotches, covering four scales transversely and two longitudinally; below this, one or more indistinct series of spots. This pattern of coloration is very similar to that of H. nasicus, but the ground color is always lighter, and the dorsal spots are lighter and less distinct. The upper lateral series is of a purplish black, and much more distinct, forming a prominent character.

Abdomen nearly entirely black, except a few yellow scuta. The head is marked as in H. nasicus, except that the nasals, prefrontals and rostral are all yellowish, while in the latter species they are dark in front of the light transverse line which crosses the crown behind the rostral; and in H. Kennerlyi the light line across the superciliaries and vertical is much broader than in H. nasicus. This species differs from H. simus in many of the same features as does H. nasicus. These, together with the small or absent loral, and small number of supplemental plates, will readily distinguish it.

Rio Grande. Dr. Kennerly.
Sonora.

ELAPS Schneider.

ELAPS EURYXANTHUS Kennicott.

Spec. char. Head very small, narrower than the neck; entirely black as far back as the angles of the mouth. Body banded alternately with black and light brick red, separated by narrow rings of creamy white, all the brands immaculate. First broad ring behind the occiput red instead of black as in the other species.

Descr. Body rather stout, but less so than in E. fulvius. Dorsal scale large. Plates of the head small except the rostral, which is very large and extends upward between the prefrontals. Prefrontals elongated laterally, more so than in E. tener. Post frontals small, elongated laterally; vertical very small and narrow, subhexagonal, pointed anteriorly, elongated and tapering posteriorly; it enters but slightly between the occipitals. Occipitals small, subtriangular, the anterior edge square, very slightly notched for the vertical. Seven labials above; posterior very small.

The fore part of the head is black, but the black instead of passing forward from the anterior part of the occipitals to near the eye, and thus leaving the three posterior labials yellow as in E. fulvius and E. tener, involves nearly the whole of the occipitals, and passes backward entirely behind the angle of the mouth and involves the whole of the lower jaw to behind the posterior labial, leaving a broad emargination in the black on the occiput in the bottom of which emargination are seen the white posterior tips of the occipitals. Behind this is a creamy white ring, (probably yellow in life) which is situated more posteriorly than in E. fulvius, and involves only the posterior tips of the occipitals and none of the labials. Next behind this white ring, instead of a black ring, as in the other species, is a broad light brick red one involving eleven scales. A creamy white ring three and a half scales wide separates this first red ring from a black one eight scales in width. Behind this are alternate immaculate black and red rings, seven or eight scales wide, and separated by white rings three to three and a half scales in width. There are eleven black and eleven red rings on the body separated by twice as many white ones. The tail is ringed with black and white without any red. All the rings run entirely around the body of the same color, and are wholly without spots, above and below. The plates of the head and peculiar style of coloration in this strongly marked species cannot be mistaken. The three colors, each immaculate, glossy, and clear, form a striking contrast, and the red is probably bright carmine in life, thus affording the most beautiful coloration possessed by any North American snake.

ELAPS DISTANS Kennicott.

Spec. char. Body slender, with very narrow black rings, four or five scales in width, separated by intervals, three or four times as wide, of brownish or reddish, entirely unspotted. No light rings separating the red and black ones. Under lip and jaw wholly without black, and the tip of nose light.

Descr. Body very slender; tail long for the genus. Dorsal scales small. Plates of the head generally larger than in E. euryxanthus; rostral broad and not as high as in E. euryxanthus. Anterior frontals rather small, and slightly elongated laterally; postfrontals large, pentagonal, as broad as long. Superciliaries quadrangular, elongated, narrow. Vertical, pentagonal, rather large, but narrow, the pointed posterior extremity inserted between the occipitals, as in E. fulvius.

The ground color of the body in the alcoholic specimen is reddish brown, probably brighter red in life, with twelve very narrow black rings from head to anus. At the edges of the black rings the reddish color becomes indistinctly lighter for half a scale, but there is no well defined light ring bordering the black as in the other species. On the tail are five broad black bands separated by narrow light rings. The anterior part of the head back to the middle of the occipitals and the upper jaw to the fourth labial is black, but this color does not extend on the lower jaw at all, and the lower edge of the rostral and upper labials is light. On the posterior part of the head is the usual light ring, but situated farther back than in E. fulvius, its anterior border passing across the middle of the occipitals a little behind the vertical and thence down and forward to the fourth labial, expanding below upon the whole of the lower jaw. On the neck behind this light ring is a black one, about five or six scales in width, which does not run entirely around the body, being interrupted for a short distance on the abdomen. Behind this, the black annulations are perfect, each four or five scales in width, and separated by intervals of fifteen to twenty scales of the ground color. The black annulations are broader on the vertebral region than laterally and beneath where they cover three or four dorsal scales, and the same number of abdominal scutellæ. The black rings on the tail are about eight scales wide, and separated by light intervals of only two or three scales.

The narrow black rings, separated by very wide intervals, will at once distinguish this species from any of the others here described. There are also no blotches or dots of black on the red intervals, and, if the colors of the specimen described have not been much altered by soaking, the absence of distinct light rings of a third color between the black and red ones will form a striking character. The color of the light occipital ring and of the light rings on the tail is probably yellow or white in life. The mutilated condition of the head prevents an accurate description of its outline, but it is apparently small and narrow as in E. tener.

1144. Batosegachie, Chihuahua. John Potts. 216, 48, 12, 22, 3.

Notes and descriptions of new and little known species of American Reptiles.

BY E. D. COPE.

OPHIDIA.

CHILOMENISCUS Cope.

Size small. Form stout, body cylindrical, the head not distinct. Muzzle rounded, very prominent, and much depressed. Rostral plate large, with an extensive superior surface, and presenting an obtuse angle between the prefrontals: the inferior surface greater than the superior, owing to the backward position of the mandible. Head shields broad, normal, except in the confluence of the prefrontals with the nasals. Nostril connected to the anterior suture of the postfrontal by a groove. Loreal none, the postfrontals reaching the labials. One pre- two postoculars. Scales smooth. Tail short, the urosteges and anal plate divided. Teeth equal, or the posterior a little stouter. Palatines and pterygoids present.

This truly Calamarian genus is analogous to Stenorhina in the union of the nasal and prefontal shields, and perhaps the form of the muzzle and inferior position of the mouth indicates affinity to Chionactis.

C. STRAMINEUS Cope.

Common suture of the prefrontals very small, (in one specimen obliterated by the rostral,) that of the postfrontals but half the length of their sutures with the prefrontals. Vertical presenting an obtuse angle anteriorly; the superciliary sutures converging posteriorly; posterior angle less than a right-angle. Occipitals short, their common suture scarcely longer than the frontal suture of the vertical. Superior labials seven, the second reaching the minute preocular, or should that plate be absent, as will probably occur occasionally, forming with the third and fourth the inferior border of the orbit. Inferior labials eight, fifth the largest. Geneials two pair, posterior half the length of the anterior. Temporals 3—3; a larger central plate opposite the occipital suture. Scales in thirteen rows, hexagonal on the flanks, a little elongated on the back. Gastrosteges 117; one divided anal; urosteges 22. Total length of the largest specimen, nine inches; the tail, thirteen lines.

Coloration.—Inferiorly, and upon the first and second rows of dorsal scales, pale straw color. Superiorly, brownish straw color, each scale with a deep brown dot near its posterior extremity. Top of the head grayish, minutely punctulated with darker.

Hab. Cape St. Lucas, Lower California. Discovered by Mr. John Xantus. Museums of the Smithsonian Institution, Washington, and Academy of Natural Sciences, Philadelphia.

CATOSTOMA Wagler.

In the Monatsberichte der Preuss. Acad. von Wissensch., 1859, p. 275. Herr Peters identifies this genus with the Rhabdosoma of Duméril, employing, however, the name Geophis, which was given by Fitzinger in the Systema Reptilium, p. 25, many years subsequently to that of Wagler. The typical species is C. chalybeum, which the combined diagnoses of Wagler and Peters do not enable me to recognize as having yet been received at our Museum from Mexico. The most common species of the north eastern region of that country will henceforth stand as Catostoma semidoliatum with the synonymes *Rhabdosoma semidoliatum* Dum. & Bibr., and *Geophis semidoliatus* Peters, l. c. 276.

NINIA Baird & Girard.

Professor Baird has kindly pointed out to me that this genus has been identified with the Streptophorus of Duméril, by Prof. Jan of Milan, and that the type of the former, N. diademata B. and G. is the Streptophorus bifasciatus of the Erpetologie Generale. From an examination of the type specimen of Baird and Girard's description, I have become convinced of the correctness of this identification. The species of the genus will then stand :

NINIA DIADEMATA. *Streptophorus bifasciatus*, Erp. Gen. vii. 520.

NINIA ATRATA.* *Streptophorus Drozii*, l. c. p. 518.

NINIA LANSBERGII. *Streptophorus Lansbergii*, l. c. p. 518.

NINIA SEBAE. *Streptophorus Sebae*, l. c. p. 515.

In these Proceedings, 1860, p. 77, I questioned the propriety of associating this genus with the genera of Calamarinæ. I now believe that it cannot be arranged in that sub-family.

TROPIDOCLONION Cope.

T. KIRTLANDII Cope.

Regina Kirtlandii Kennicott, Proc. Acad. Nat. Sci. 1856, p. 95.

This beautiful species, first described by Mr. Kennicott under Baird and Girard's genus Regina, appears to be congeneric with the Tropidoclonion lineatum *Cope* of Kansas. In neither species is the nasal plate entirely divided, but a groove connects the nostril with the labial suture. The anal plate in the Kirtlandii is divided, entire in the lineatum. I am not prepared to regard this difference as generic here, though it certainly is among some serpents. In dentition this genus is isodont, and the head is not distinct from the body.

The Academy's Museum possesses a specimen of the T. Kirtlandii from Columbus, Ohio, presented by Prof. Lesquereux, and a second, half grown, from the neighborhood of *Trenton, New Jersey,* discovered by my friend Mr. C. C. Abbott of that place.

This specimen differs in no respect from that from Ohio. This species has therefore an extensive distribution, ranging from New Jersey to Illinois. Its habits according to Mr. Kennicott, are terrestrial, which statement is confirmed by the observations of Mr. Abbott.

TROPIDONOTUS Kuhl.

T. USTUS Cope.

Scales in twenty-one longitudinal rows, all carinate, those of the first, faintly. Those of the second row not larger than those of the vertebral. Head narrow, not depressed, the end of the muzzle slightly elevated. Lateral borders of the vertical plate slightly concave, not convergent posteriorly. Prefrontals small. Nostril in the supero-posterior angle of the prenasal plate. Loreal longer than high. Preocular single, two postoculars. Superior labials eight, fourth and fifth bounding the orbit. Lower postocular in contact with the occipital and a large temporal plate, which extends to the eighth labial.

A second large, and three small temporals border the occipitals exteriorly. Ten inferior labials, sixth largest. Posterior pair of geneials longer than the anterior. Tail one-fourth the total length. Gastrosteges 126 ; anal one, divided ; urosteges 66. Total length 12 in., 1 line. Tail 2 in. 10 l.

Coloration. Above, a yellowish ferruginous, pale upon the head, very deep upon the tail. Upon careful examination there are to be seen very indistinct erect half bands upon each side, extending from the first to the central rows of scales, alternating with each other. Posteriorly they become entirely transverse. Belly salmon color, passing into orange ferruginous upon the urosteges. Each gastrostege has a large central area of yellow, bordered on each side with wax yellow, (*cereus* Lat.) these colors, however, blending posteriorly.

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*See Proc. Phil. Acad. 1860, p. 76.

One specimen in alcohol, sent to the Smithsonian Institution, from Charlotte Harbor, Florida, by E. M. Baker.

T. CELAENO Cope.

Scales in nineteen or twenty-one rows, all carinate except the first. Head broad and distinct posteriorly, constricted at the orbits, and remarkably narrow anteriorly. Profile of the crown slightly, but regularly convex. Superciliary plates narrow and elongate. Vertical elongate, its lateral borders concave, not convergent posteriorly, its length greater than that of the occipital suture. Frontals small, the anterior almost triangular. Nasals and loral rather large, the posterior border of the latter very oblique. Preocular one, postoculars three. Superior labials eight, eye resting on the fourth and fifth, sixth and seventh largest and bounded above by the first temporal. Remaining temporals four on each side. Inferior labials ten, sixth longest. Posterior geneials longer than the anterior. General form rather slender, tail one-fifth the total length. Gastrosteges 145 ; one divided anal ; urosteges 71.

Coloration. The general hue is leaden black above and below, with the following paler markings. A band of leaden gray commences upon the neck, occupying the second, third, and part of the first rows of scales. This extends to the anus, becoming darker, and leaving the first row of scales posteriorly. Upon the anterior third of the body irregular narrow vertical bands extend from this, separated by black spaces of one and a half or two scales in width, which spaces are sometimes enclosed by the confluence of the bands on each side of the black vertebral line.

One specimen (No. 351,) discovered by Mr. John Xantus, at Cape St. Lucas, Lower California, and deposited in the Museum of the Smithsonian Institute.

This species may be distinguished from those called Eutænia, by Baird and Girard, by its divided postabdominal scutellum. It, however, bears quite a close resemblance to some of them, e. g., E. Pickeringii. It is unnecessary to institute any comparisons with our true Tropidonoti, (which possesses the divided scutellum,) it is so strikingly different from all of them.

T. TEPHROPLEURA Cope.

Scales in nineteen or twenty-one longitudinal rows, keels obsolete on the external series only ; second row larger than those of the back. Head distinct, narrow anteriorly, its lateral outlines regularly converging from the canthus of the mouth. Outline of the crown slightly depressed behind the plane of the orbits. Head shields much elongated, especially the superciliaries and vertical, the latter twice as long as wide. The lateral borders do not converge, and the posterior angle is but little greater than a right angle. Nasals large ; loreal as high as long ; two pre-, three postoculars, the former partially united in an old individual. Superior labials eight, sixth much the largest, its superior border and two-thirds of that of the seventh in contact with the very large first temporal. Remaining temporals normally four, sometimes confluent in pairs. Inferior labials ten, sixth the longest. General form stout ; tail one-fourth of the total length. Gastrosteges 146 ; one divided anal ; urosteges 83. Total length 32 inches, tail 8 in., 3l.; of a larger specimen, 9 in., 8 l., and the total length 38 in. 3l.

Coloration. Above plumbeous brown, shading into plumbeous grey or ash upon the sides, which color fades into pale greyish yellow upon the middle of the belly. Urosteges ashy, with a dark shade along the central suture. When the skin of the upper part of the body is stretched, it is seen to be leaden black along the medial line, with two or three series of quadrate spots of the same color on each side. These spots usually alternate, but are sometimes confluent into oblique bands.

Two specimens (4681 *type*, and 4680,) in the museum of the Smithsonian Institution, Washington, discovered at Cape St. Lucas, in Lower California, by Mr. John Xantus.

The number of rows of scales will distinguish this species from Tropidonotus Woodhousei *Hallow.* Tropidonotus Couchii *Cope* (*Nerodia Couchii* Kennicott, Proc. Phila. Acad., Aug., 1860), has a very differently formed head, but one preocular shield, and a few other distinguishing peculiarities. Tropidonotus validus *Cope* (*Regina valida* Kenn. l. c.) possesses a *short* head, a rostral plate as high as broad, one preocular, and small occipitals, according to Mr. Kennicott, none of which peculiarities exist in the T. tephropleura.

The three Tropidonotes here described possess the true syncranterian type of dentition. So also, does the Trop. rigidus *Holbr.*, but the T. leberis *Holbr.*, and some other species included by Baird & Girard in their genus "Regina," exhibit an almost constant isodont dentition. It is possible that a genus intermediate between Tropidonotus and some forms of Homalopsinæ, may exist in nature; that such genus be characterized by the possession of teeth of equal lengths, and that the only name applicable to it be Regina; yet the generic separation of the rigidus from the leberis will not accord with the present views of most herpetologists.

HERPETODRYAS Boie.

H. BODDAERTII Schleg.

A variety of this species has been obtained in the vicinity of Xalapa, Mexico, by Sr. R. M. DeOca. It is distinguished by the color of the tail, which is of a bright salmon tint. Mus. Smithsonian Inst.

SPILOTES Wagler.

The species of this genus may be divided into two sections, one characterized by the possession of keeled scales, the other having them smooth. To the former belong the S. pullatus, poecilostoma and poecilonotus; to the latter, which Fitzinger has called Drymarchon, the S. coraïs and melanurus pertain. All the structural peculiarities of this latter group are shared by the Colubri Couperi and obsoletus of Holbrook's American Herpetology. The latter species is not the obsoletus of Say, as supposed by Dr. Holbrook, which has been correctly identified by Mr. Kennicott, and shown to belong to a different genus; vid. Scotophis obsoletus Kenn. Proc. Acad. Aug., 1860. We therefore propose that Holbrook's species in question be known henceforth as

SPILOTES COUPERI Cope.

Syn. *Coluber Couperi* Holbrook, N. Am. Herp. iii. 75, pl. xvi.
Georgia Couperi Baird & Girard, Catalogue, p. 92.

SPILOTES EREBENNUS Cope.

Syn. *Coluber obsoletus* Holbr. l. c. iii. p. 61, pl. xii.
Georgia obsoleta Bd. & Grd. l. c. p. 158. U. S. and Mex. Bound. Surv. Rept. pl. xv.

PITYOPHIS Holbrook.

P. HÆMATOÏS Cope.

Scales in from thirty-one to thirty-five rows, the exterior ten or twelve entirely smooth, the central faintly carinate; the scales three times as wide as long near the middle of the body. Head distinct, elongate, depressed, especially upon the region of the sutura coronalis. Occipital shield as long as the vertical, but subject, as in other species of the genus, to subdivision. Length of the vertical one and a half times the anterior breadth, the superciliary borders concave and slightly divergent posteriorly. Posterior angle obtuse. Postfrontals four, elongate, all bordering the vertical. Rostral not prominent; as broad as high, possessing six sutural borders, the nasal twice as long as any of the others. Nasal shields large, loreal longer than high. Preoculars normally two, sometimes three, or one. Postoculars three, exceptionally four.

Superior labials normally nine, (exceptionally ten,) the fifth entering the orbit. Inferior labials normally twelve ; geneials two pair, anterior twice the length of the posterior. Tail one-seventh of the total length. Gastrosteges 247, an entire anal, urosteges 61. Total length 5 ft. 4 in. Tail 9 in.

Coloration. The ground color above and below is a rich straw yellow. The muzzle is shaded anteriorly with ashy or fuscous ; this color gradually fades into a lively sanguineous or testaceous, which tint prevails upon the posterior part of the head, and anterior part of the body. There arises upon the tenth or eleventh row of the scales of the neck upon each side, a longitudinal band of the same color, which deepens posteriorly, and unites with its fellow at intervals of three or four scales by a gradual widening upon its dorsal border. Thus a scalariform series of dorsal blotches is formed, whose transverse diameter increases regularly posteriorly, and whose intervals diminish, being anteriorly four scales,—upon the tail, one and a half. The connecting band remains unbroken upon the anterior fourth of the body only. Separated from this by an interval of one half or a whole scale, another longitudinal and very narrow band arises on the neck. It is much more distinct opposite the intervals between the dorsal blotches, and upon the disappearance of the line connecting the latter, partially assumes its position, and breaks up into an alternating series of very elongated spots. The dorsal intervals are thus widened to a breadth of seven and two halves scales. There also commences upon the neck a second lateral series of spots, which occupy a length of five scales on the fourth, fifth and sixth rows. Their length decreases to three scales opposite the anus, where they unite with the superior lateral series. Every second pair of gastrosteges is tipped with sanguineous. All the markings of this serpent are sanguineous anteriorly, but deeper posteriorly, passing through shades of maroon, until upon the terminal third of the total length they are entirely black. A black or maroon band passes along the suture of the urosteges. Belly immaculate.

Hab. Cape St. Lucas, Lower California, sent by Mr. John Xantus. Museums Smithsonian, Washington ; Acad. Nat. Sciences, Philada.

This species will compare favorably for beauty with the elegant Tropidonotus concinnus of the lamented Dr. Hallowell, but readily yields the palm to the gorgeous Elaps euryxanthus of Kennicott.

LYCODON Boie.

Syn. *Lycognathus*[*] Duméril, Erp. Gen. vii. p. 916.

L. LYROPHANES Cope.

In describing this species, I will repeat some of the generic characters, premising that the form belongs probably to the Dipsadinæ, to the typical forms of which it is connected by Tripanurgus *Fitz.*

Dentition resembling that of Macroprotodon cucullatus *Cope.* Seven teeth upon the superior maxillary bone, of which one posterior is elongate and grooved ; three central, small and recurved, and three anterior, very long, the first longest and least recurved. The central three are not separated from those anterior and posterior to them by spaces wider than those existing between themselves. Palatine teeth six, the anterior three the longest, all longer than the pterygoids. The three anterior mandibular teeth longer and more widely spaced than the posterior, having an outward direction as in Hormonotus *Hallow.*

Scales in twenty-one rows, rather broad posteriorly and upon the middle of the body, not larger upon the vertebral line. The body anteriorly is slender, contracting to a small neck. Tail less than one-sixth of the total length. Head very distinct, the temples much swollen, so that the greatest breadth in life is just posterior to the eyes, though the length of head posterior to the angle of the vertical shield is one line greater than that anterior. Side of the head constricted at the orbits, the muzzle rather narrow and truncate. Rostral plate broader than high, with but four sutural borders, the superior very long; the apex apparent upon the surface of the head. Prefrontals much broader than long; one-third the size of that part of the postfrontals visible from above. Upon a vertical view, the postfrontals appear longer than broad. Occipitals, superciliaries and vertical developed; the last presenting a right angle posteriorly, and having the lateral borders slightly concave and converging; the first not longer, and about as wide as long, in contact with a large scale in their posterior, common emargination. Nasal plates distinctly divided, very small, higher than long. Loreal plates two, the anterior higher than long, intercalated superiorly between the pre- and postfrontal, posterior as long as high. Preoculars three, .the superior largest, not in contact with the vertical; the inferior bounded anteriorly by the third upper labial. Postoculars three, the inferior a little the largest. Superior labials nine, fourth and fifth entering the orbit, sixth largest, higher than broad. Inferior labials twelve, the third and fourth narrow, and much produced posteriorly. Geneials two pair, the anterior longest. Gastrosteges 236, one divided anal, urosteges 70. Total length 27 in. 10 lin. Tail 4 in. 4 lin.

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[*] See my remarks upon this genus, Proc. Phila. Acad. 1860, p. 262.

Coloration.—The ground color is a light grey. The muzzle is crossed by an indistinct ashy band, which extends upon the anterior part of the postfrontals. The posterior half of these plates is involved in a deep brown band which crosses the head between the eyes, whose posterior border is very concave, extending upon the superciliaries to the vertical plane of the pupil of the eye. This band is continued posteriorly, upon the inferior postocular and sixth upper labial. A pair of broad diverging bands commences one band on either side of the centre of the vertical, crosses the superciliary and occipital shields, and following the expanded outline of the temporal and tympanic regions, contracts and becomes longitudinal and parallel upon the neck. A brown spot upon the posterior extremity of the vertical plates with a posterior elongation, completes the resemblance of this figure to a lyre, or still more to that musical (?) instrument familiarly known to children as the "Jews-harp." The ground color appears upon the vertex as an anchor-shaped figure, and on the cheek, as an oblique band. The back, as far as the anus, is ornamented with twenty-one pairs of deep brown spots, their gemination only apparent anteriorly by the punctulate character of the scales in the intervals between the pairs. These intervals are always about three scales wide; the lesser, two and a half anteriorly, one and a half posteriorly. Dorsal spots seven scales wide; as the scales are broader posteriorly, the spots are also. There is an irregular series of lateral spots, one opposite each of the intervals, sometimes confluent with the dorsal spots: anteriorly they form a very narrow broken band. Another series of spots involves the tips of pairs of the gastrosteges, which are separated by two, three, four, or even five immaculate ones. Ten confluent pairs of spots on the upper surface of the tail. Whole under surface whitish.

Type (Sm. No. 4080), discovered by Mr. J. Xantus at Cape St. Lucas, Lower California. Another specimen collected by Mr. Irwin, at Ft. Buchanan, Arizona, appears to be identical, though in a bad state of preservation.

The discovery of this species by Messrs. Irwin and Xantus, is one of the most interesting additions to North American Herpetology. The form is strictly tropical, for we learn from the Erpetologie Generale that the L. geminatus is Brazilian, and the scolopax has been brought from Guiana and Santa Cruz de la Sierra in the eastern region of Bolivia. There are no other species known. It is important to notice that the present species differs from those of South America in the possession of *two* loreals and *three* preoculars, but with our present knowledge of the Dipsadinæ, generic difference can hardly be predicated upon peculiarities of this kind.

TELEURASPIS Cope.

In these Proceedings for December, 1859, I characterized a genus of crotaline serpents under the above name. It was intended to include all the serpents hitherto arranged with Bothrops, which possess undivided urosteges. In examining the structure of these serpents, I recognized two sections of the genus, the one containing a single species, and characterized by the possession of a series of elevated scales exterior to the superciliary plate ; the other containing several species, which have that plate, as is Bothrops, i. e. forming the superior border of the orbit. It seemed probable that these might be generically distinct, yet the possession of the horned eyebrow by but a single species, would not admit of such a conclusion. Since then, I have received from Dr. Albert Günther, his description and beautiful figure of Lachesis nitidus, published in the P. Z. S., Nov., 1859. This serpent, which was discovered by Mr. Fraser, in the Andes of Equador, is obviously a second species of the typical group of my Teleuraspis ; we can perceive no propriety in its position in Lachesis, a genus having urosteges anteriorly two-rowed, at the tip four-rowed.

In the Monatsberichte der Königl. Preuss. Acad. for March 1859, p. 278. Herr. Peters characterized a genus Bothriëchis, for a species resembling a Bothrops, except in its entire urosteges, and keelless scales of the vertex. Excluding the latter character, which does not appear to be of generic value, this genus is exactly co-extensive with my second section of Teleüraspis. The following, therefore, will be what appears to me to be the correct nomenclature of the species included by me in Teleüraspis l. c. with the addition of those here mentioned.

Crotaline Viperidæ, without crepitaculum having a scaled scarlet vertex, superciliary plates present, and entire urosteges.

1. TELEÜRASPIS Cope, Proc. Philada. Acad. Nat. Sci. 1859, p. 338.
   T. SCHLEGELI Cope, l. c.
   Trigonocephalus Schlegeli Berthold, vid. l, c.
   T. NITIDA Cope, hujus operis.
   Lachesis nitidus, Günther, l. c.

2. BOTHRIËCHIS Peters, Monatsbericht Königl. Preuss. Acad. 1859, p. 278.
   B. NIGROVIRIDIS Peters, l. c.
   B. CASTELNAUI Cope. h. op.
   Bothrops Castelnaudi Dum. & Bibr., vid. l. c.
   Teleüraspis Castelnaui Cope, l. c.
   B. LANSBERGII Cope, h. op.
   Trigonocephalus Lansbergii Schleg., loc.?
   Teleüraspis Lansbergii Cope, l. c.
   ? B. NUMMIFER Cope, h. op.
   Trigonocephalus nummifer Rüpp., loc.?
   ? *Teleüraspis nummifer* Cope, l. c.

Contributions to American Lepidopterology.—No. 6.

BY BRACKENRIDGE CLEMENS, M. D.

TINEINA. Fam. *TORTRICIDÆ.*

ANTITHESIA Stephens.

Fore wings much narrower at the base than across the inner angle; costa regularly arched; apex obtuse; hind margin obliquely rounded; apical nervule simple; disk moderately broad, rounded behind, and with a secondary cell.

Hind wings much broader than the fore wings, ovate; branches of the subcostal connivent at their origins; discal vein curved; medio-discal on an erect moderate stalk; the two superior nervules of the median vein scarcely from a common point. Head roughened; with ocelli. Face rounded, rather narrow. Eyes prominent, rather large; antennæ approximated, inserted on the forehead; setaceous, with whorls of minute cilia, pubescent beneath. Palpi exceeding the clypeus, ascending, rather hairy beneath and at the end of the middle joint above, which is truncate; terminal joint minute, oval. Tongue about one-half as long as the anterior coxæ. Thorax with a bifid tuft behind. Abdomen tufted in the ♂.

A. nimbatana.—Head and palpi dark brown, the latter whitish beneath. Thorax dark brownish, pale ochreous white in the middle. Fore wings dark brownish, with an indistinct violet hue from the base to beyond the middle; apical portion of the wing whitish, with brownish dots along the costa. Hind wings pale grayish fuscous.

The larva binds together the leaves of the rose. The insect may be the A. ochroleucana of Europe, and may not be a native of our continent. The apical edge of the dark brownish portion of the wing is *obliquely rounded*, and is sometimes varied with whitish on the inner margin and towards the base.

Mass. Penna. Ill.

A. bipartitana.—Fore wings white, with a dark brown basal patch and a rather broad central fascia of the same hue, with the apical edge straight. The costa exterior to the central fascia has two or three dark brown dots; the tip of the wing is varied with the same hue, and in the middle of the apical white portion is a pale brownish spot. *Cilia spotted with dark brown.* Hind wings whitish, fuscous at the apex and towards the hind margin.

This insect bears a superficial resemblance to E. fasciatana.

Mass. From Mr. Scudder.

A.? coruscana.—Fore wings luteous, varied with dark brown, spotted towards the base with metallic leaden hued spots; a more or less distinct central fascia spotted with leaden spots, especially on its edges, and a band from the costa, near the tip of the inner margin, is edged with metallic leaden-hued lines on both sides. The central and subapical bands are often dark brown irrorated with luteous, and the basal patch sometimes distinct, and again scarcely, if at all, indicated. Hind wings dark brown.

In general appearance, this insect strongly resembles those of the genus Exartema, but wants the peculiar appendage at the base of the inner margin of the hind wings in the latter genus, besides differing from it in other respects. In structure it agrees very nearly with the genus in which it is placed.

LOZOTÆNIA Stephens.

Fore wings nearly as broad toward the base as at the inner angle; with the costa much arched at the base, emarginate from the middle to the tip, which is slightly produced upwards, and emarginate beneath the tip on the hinder margin. The inner angle obtusely rounded. In the ♂ the costa at the base has a fold or flap of scales on the upper surface. The disk is elongated, slightly curved, *without distinct secondary cell.* The second disco-central nervule is approximated to the medio-superior, and the posterior, very remote from the penultimate, is opposite at its origin to that of the first subcosto-marginal nervule. In the posterior wings the discal vein is curved and the disco-central is approximated to the median system.

Head scarcely rough, with a slight frontal tuft between the antennæ. With ocelli. Face smooth and rather narrow. Eyes prominent. Antennæ separated at their bases, setaceous, pubescent beneath, or microscopically ciliated. Palpi ascending, cylindrical, densely clothed with short scales; terminal joint extremely short, slender, ovate, about as long as the basal joint; middle joint three or four times longer than the terminal, without spreading scales at the end. Tongue nearly as long as the anterior coxæ. Thorax not tufted. Abdomen tufted at the tip in the ♂.

L. Rosaceana, *Harris*, Ins. Mass., 2d ed., 376.—Pale cinnamon-brown. Fore wings with a basal and oblique central fascia of a darker reddish brown and a triangular spot of the same hue on the costa, near the tip, and frequently with a subterminal band. The wing is more or less striated with dark reddish brown lines. Hind wings ochreous yellow, internally blackish.

The larva binds together the leaves of the rose and other plants.

L. fervidana.—Palpi, head and thorax brownish ochreous. Fore wings ochreous, with the basal patch reddish brown; a reddish brown central fascia, interrupted on the disk, with a shining dark brownish spot above it on the middle of the costa; near the tip, on the costa, is a dark brownish spot, and between the two costal spots, beneath the middle of the wing, is a diffuse patch of the same hue. Hind wings fuscous, along the costa yellowish white.

PERONEA Curtis.

Fore wings with *tufts of elevated scales scattered over the surface;* costa not folded, rather abruptly arched at the base, slightly concave in the middle; apex slightly produced, and the hind margin beneath it slightly concave; inner angle rounded. The disk is placed in the middle of the wing, is rather narrow and without secondary cell; apical vein simple. In the hind wings the costal and subcostal are distinct, the branches of the latter connivent; discal vein curved; medio-discal on a short stalk at the bifurcation of the two superior branches of the median vein.

Head scarcely rough. Ocelli small. Face short, rounded, slightly tufted in the middle. Eyes prominent. Antennæ setaceous, pubescent beneath. Palpi exceeding the face by one half their length, rather truncate, ascending toward the base and porrected from the middle; terminal joint *minute*, almost concealed in the scales of the middle joint, which is thin and cylindrical at its base, arching upward on its upper edge, nearly straight beneath, and densely clothed with scales at its end, especially above. Tongue about one-half as long as the anterior coxæ.

P. Viburnana.—Palpi brownish gray. Head dark brownish. Thorax blackish brown in front, dark ochreous behind. Fore wings grayish, with a reddish brown costal patch at the base, and a large triangular patch of the same hue, extending from the middle of the costa to the tip, and nearly across the wing; it is margined internally with dark ochreous, and has an oblique line of the same hue from the costa, passing through its middle. The tufts are minute, black and disposed on ochreous colored bases. Hind wings fuscous.

The larva rolls and feeds on the leaves of Viburnum and wild cherry. It is immaculate pale green; head pale brownish. The rolled leaves contain a silken web or gallery, in which the larva lives.

PLATYNOTA.

Fore wings *with tufts and lines* of elevated scales disposed over the surface; *costa broadly folded* at the base in the ♂, where it is abruptly arched, and straight along the middle; the tip and hind margin rounded. The disk is placed in the middle of the wing, and is broadest in the middle, without secondary cell. There are three subcosto-marginal nervules; the apical branch is *bifid*, with two disco-central nervules, the lower one approximated to the median system; the medio-posterior is moderately remote from the penultimate branch, and is opposite the *second marginal nervule.* In the hind wings the costal and subcostal veins arise from a common stalk; the branches of the subcostal separate from each other at the origin of the discal vein, which is somewhat angulated; the two superior branches of the median arise at a *common point*, where is likewise received the medio-discal on a short oblique stalk, the nervule running parallel with the medio-superior nervule. In repose the wings are deflexed in the apical portion along the middle.

Head smooth, vertex elongated. Face smooth nearly naked, concealed by the labial palpi; forehead with a thin tuft. Eyes rather small, moderately prominent. Antennæ setaceous, pubescent beneath. Palpi exceeding the face by more than one-half the length, *crambiform*, porrected, flattened, and tapering from the middle to the end; terminal joint distinct, short, smooth and ovate; middle joint suddenly arching upward at the face, whence it is porrected and slightly deflexed, roughly clothed with scales above and beneath. Tongue rudimentary, almost obsolete.

P. sentana.—Head and palpi dark brownish, slightly sprinkled with grayish. Fore wings dark grayish brown, with an oblique line of dark brownish scales near the base, terminating in a tuft of the same hue on the fold. An oblique line of elevated dark brownish scales crosses the wing from the costa within the middle, to the middle of the inner margin, and in the middle of the wing, exterior to it, is a short blackish streak, beneath which the wing is discolored with dark reddish brown; along the costa, exterior and parallel to the central line, are two shorter and similar lines. Near the hind margin, and parallel with it, are two lines of elevated dark brownish scales crossing the nervules. Hind wings yellowish fuscous.

The larva feeds on the leaves of Viburnum prunifolium. It is dark brown, with paler brown papilliform points, and two indistinct subdorsal lines of the same hue. It leaves its food plant to weave a white silken cocoon, and appears as an imago early in July.

P. flavedana.—Reddish saffron. Fore wings with an oblique line near the base, terminating in a tuft on the fold; an oblique central fascia edged on each side with elevated scales, and a fascia near the tip, joining the central fascia, reddish brown. Near the terminal border of the wing is a line of raised scales of the general hue. Hind wings reddish saffron.

Male? Palpi reddish brown, terminal joint yellowish. Head and thorax ochreous yellow. Fore wings yellow, deeper at the base than at the tip, with the middle of the wing discolored with blackish brown, having a purplish hue. At the base of the fold, on its middle and about the end of the disk, are tufts of scales, and with two transnervular lines of scales in the yellow portion. The extreme hind margin is reddish ochreous, varied somewhat with dark brownish.

These specimens may be only variations of P. sentana.

ANCHYLOPERA Stephens.

Fore wings rather narrow, with the tip usually *produced acutely*, and the hind margin falcate or concave. The disk is slightly above the middle of the wing, widening from base to apex, with four subcosto-marginal nervules; apical simple; two distinct disco-central branches. The medio-posterior arises between the first and second marginal nervules. In the hind wings the discal vein is curved. The median vein is either *two-branched, with a medio-discal nervule*, or *three-branched with the two superior branches on a moderately long common stalk*, and a medio-discal nervule on a short peduncle.

Head rather rough. With ocelli. Face slightly tufted in the middle. Eyes moderate. Antennæ setaceous, pubescent beneath. Palpi exceeding the face a little, slightly ascending but porrected, thickly and truncately scaled towards the end; terminal joint slender, minute, usually drooping, and almost concealed in the terminal scales of the middle joint, which is somewhat curved and roughly scaled beneath and at the end above. Tongue about one-half as long as the anterior coxæ, and a little longer than the labial palpi.

§ *Tip of fore wings produced. Median vein of hind wings 2-branched, with medio-discal branch.*

A. Spireæfoliana.—Palpi white, reddish brown at the base. Head reddish brown. Thorax white, disk reddish brown. Fore wings white with a large reddish brown dorsal patch extending from the base to the middle of the wing, and rounded on the costal edge; an oblique fascia of the same hue from the middle of the costa to about the centre of the wing, with the costa exterior to it streaked alternately with white and reddish brown to the apex. The extreme apex reddish brown. Hind wings grayish fuscous.

The larva feeds on the leaves of Spiræa opulifolia (nine bark.) One of the veins of the leaf is drawn closely to the midrib so as to produce a fold in it from the base, in which the larva lives and feeds on the parenchyma of the leaf. The larva deserts the food plant to form its cocoon, which is slight and woven between applied or folded leaves. The first brood produce imagos early in July. There is nothing characteristic in the ornamentation of the larva; its head and body are pale green, or yellowish green.

A. nubeculana.—Fore wings white with a dark brown dorsal patch extending from the base to the middle of the wing, with its costal edge irregular or doubly curved. The oblique central fascia is almost obsolete except on the middle of the costa where it appears as a dark grayish brown spot, and in the middle of the wing beneath it is a grayish brown round spot exterior to which is a short black dash. The wing above the inner angle is varied with grayish brown and brownish. The costa exterior of the middle is alternately streaked with white and brownish, becoming reddish brown toward the tip. Extreme apex reddish brown.

A. Platanana.—Fore wings pale reddish ochreous, whitish along the costa at the base, frequently with a semioval patch of the general hue at the base of the inner margin. An abbreviated central, oblique fascia of the general hue, with two reddish brown streaks in the middle of the wing near the hind margin, and the costa from the central fascia to the tip, streaked with the general hue and whitish, and with two white streaks *in the cilia* beneath the tip. Extreme apex reddish saffron. Hind wings whitish.

The larva folds the leaf of sycamore near the base, weaving a web and drawing the side of the leaf to the midrib in June and July.

§§ *Tip of fore wings not acutely produced. Fore wings with very faintly indicated secondary cell. Hind wings, median vein 2-branched, and with a medio-discal branch.*

A. striatana.—Fore wings grayish brown, with three white streaks from the base, one along the costa, one in the middle of the wing, and one along the inner margin. The costa from the middle of the tip is alternately streaked with white and greyish brown. Ocelloid patch whitish with one or two black streaks, and with scales somewhat silvery internally and externally to the streaks. Hind wings fuscous.

Dr. Morris. Baltimore and Easton.

§§ *Hind wings with median vein 3-branched, the two superior pedunculated. In repose the fore wings are hooked in the middle of hind margin.*

A. costomaculana.—Fore wings ochreous-white, with a costal somewhat triangular patch extending from the middle to the tip and rounded in the middle of the wing; in the middle and toward the tip it is dark reddish brown, and along the costa tinted with dark purplish. The costa minutely striated from the base. Hind wings fuscous, paler towards the base.

DYSODIA.

Fore wings with *a subvitreous spot on the disk;* narrow at the base, dilated beyond the middle; tip obtusely rounded, hind margin rounded, inner margin sinuous. The disk is above the middle of the wing and is dilated posteriorly. From the subcostal vein arise three very oblique marginal branches, the first behind the middle of the disk and the others approximated near its posterior end; the apical and post-apical nervules *arise at a common point*, from which is given off a faint discal vein, which is obsolete in the middle (?) and gives off on the costal side of the wing a disco-central branch; another arises on the median side from a short vertical stalk. Median vein 3-branched, the posterior opposite the first marginal. In the hind wings the subvitreous spot is *larger than in the fore wings and angulated;* the tip is very obtusely rounded, and the hind margin is *emarginate opposite the disk*, which is very broad. The costal and subcostal veins cross each other about the middle of the disk and are continued to the base of the wing separately; the subcostal is bifid beyond the origin of the discal vein which is faint and angulated, and the branches of the subcostal separate from the point of bifurcation. The median vein is three-branched, with a medio-discal nervule running parallel with the superior nervule from an oblique stalk.

Head smooth, although hairy; rather impacted. *Without ocelli.* Face broad, rounded. Eyes rather small, not prominent. Antennæ setaceous, pubescent beneath. Palpi exceeding the face by about one-third of their length, ascending and rather porrected, *tapering from the base to the tip* and rather thick; basal joint *very hairy;* middle joint tapering to the tip, *with an external ridge* and squamose, but not hairy; terminal joint distinct, rather slender, squamose, rather less than one half as long as the middle joint. Tongue stout, *and one half as long as the body beneath.*

Thorax thick and tufted; patagid with long elevated scales. All the femora and tibiæ *clothed with long hairs.*

D. oculatana.—Head, palpi and prothorax ochreous-fuscous. Thoracic tuft ochreous. Fore wings fuscous, varied with ochreous-yellow, with a small subvitreous spot on the disk. The base of the wing and a band just internal to the discal spot ochreous-yellow, each varied with fuscous striæ; and crossing the middle of the nervules is another band of the same hue, slightly clouded with fuscous above the middle, having a spot of the same hue behind it, above the inner angle. Hind wings with a *large subvitreus spot*, produced towards the external margin; similar in color to the fore wings, but almost reticulated with fuscous.

The larva is quite as peculiar as the perfect insect. It is sluggish, with a thick and much contracted body, and uniform in diameter. Head as broad as the body, black. Color yellowish or orange yellow, thickly covered with rows of oval, black tubercles each having a hair. The terminal extremity is furnished with a black shield. The second segment (the one next the head) is naked, softish and rather swollen. Length about six lines. The larva has a disagreeable odor. It feeds on Eupatorium ageratoides (white snake-root) beginning on one side of a leaf to form a cone or cornet, cutting and rolling the separated portion, as it increases in size, sometimes across the entire leaf. At maturity it eats away the closed end of the cone and falling to the earth forms on its surface a silken cocoon. There are two broods of larva, one which matures in June, July, and another in the Fall, to appear as imagos in April. I have never seen the imago on wing, but it will be found, doubtless, wherever its food plant is distributed. The plant is a common one, especially northward. The insect is rather rare in this region.

STIGMONOTA Guenée.

There is but little that is characteristic in the wing structure. In the fore wings the costa is regularly arched, not broad at the base; apex obtuse, hind margin rounded, and slightly concave beneath the tip. The disk is rounded behind, placed above the middle of the wing, *with a small secondary cell* and discal fold distinct. In the hind wings the costal and subcostal veins arise from a common stalk about the middle of the cell. The discal vein is rather faint and slightly angulated in the middle, with a disco-central branch arising below the middle on a moderate vertical stalk. Median vein with the two superior nervules arising at a common point.

Head rather rough, with ocelli. Face broad, rounded. Antennæ setaceous, *simple*. Palpi a little longer than the head, slender, cylindrical and slightly scaly beneath, separated and slightly curved; terminal joint distinct, cylindrical and obovate; middle joint curved, slightly scaly beneath. Tongue equal in length to the labial palpi.

S. interstinctana.—Palpi whitish. Head and thorax dark brown. Fore wings dark brown, with a curved white, somewhat silvery dorsal streak divided in the middle by a dark brown line and a rather faint silvery streak at the inner angle. The costa from near the base to the tip is streaked with yellowish white, slightly silvery-hued. Hind wings dark brown, along the costa in the middle, white.

HALONOTA Stephens.

Fore wings with costa regularly arched, but not broad at the base, *with a fold at the base in the ♂*; tip rather acute, hind margin rounded, slightly indented beneath the tip. The disk is rather above the middle of the wing, with a moderate secondary cell and the fold distinct; *the discal vein straight*. In the hind wings the costal and subcostal veins are *distinct at the base;* the lower branch of the subcostal vein *is separated from the upper* and is borne on a short nearly straight stalk; discal vein angulated, giving rise below the middle to a disco-central vein on the nearly vertical stalk. Median with the two superior nervules arising from a common stalk.

Head scarcely smooth, with large ocelli. Face moderately broad, rather naked beneath the middle. Antennæ setaceous, minutely pubescent beneath. Palpi exceeding the face by nearly one half their length, moderately remote, applied to the face and thence porrected, rather broad with spreading scales at the tip of the middle joint above and almost tufted at the tip beneath; terminal joint slender, drooping somewhat, and *nearly as long as the middle joint*, but partly concealed in its terminal hairs. Tongue as long as the labial palpi.

H. simulana.—Palpi dull ochreous, fuscous at the tip. Head brownish ochreous. Fore wings brown with a slight brassy hue, with an ochreous, dorsal blotch plain in the ♂ and striated with brownish in the ♀. Costa streaked with ochreous, and with two slightly violet hued streaks from the costa, one running beneath the tip and the other to a faint ocelloid patch, behind which on the hinder margin are three black spots. The apical portion of the wing is varied with ochreous. Hind wings fuscous, white on the costa.

Dr. Morris. Baltimore and Easton.

A. incanana.—Palpi white. Head dark gray. Fore wings dark brown, varied with whitish along the inner margin toward the base, with an oblique dorsal white patch, terminating in the ocelloid patch, with a slender, irregular dark brown line on its middle, and one or two spots on the dorsal edge of the wing. The costa is streaked with white, slightly silvery; beyond the middle of the wing are one or two purplish-hued lines, one of which round the ocelloid patch, where it becomes somewhat diffuse. The ocelloid patch is ochreous, with three black streaks, and is placed nearly in the middle of the apical portion of the wing, with a white spot adjoining and beneath it. Hinder border with three or four terminal black spots above the inner angle. Hind wings dark fuscous, grayish towards the base.

EPHIPPIPHORA Duponchel.

Fore wings rather narrow; costa regularly arched; tip obtuse; hind margin rounded or slightly sinuous. The wing structure as usual. In the hind wings the costal and subcostal are distinct to the base; the branches of the latter are *connivent* from their origins. The discal vein is curved, and gives rise to an arched medio-discal nervule. In the median vein *the upper nervule is forked remotely* from the insertion of the medio-discal.

Head rather rough. Ocelli large. Face slightly tufted. Eyes rather prominent, round. Antennæ setaceous, pubescent beneath. Palpi slightly exceeding the face, ascending, truncate, and thickly haired beneath and at the tip; the terminal joint slender, obovate, much shorter than the middle, which from its clothing appears to be nearly truncate, broad and flattened. Tongue as long as the palpi.

E. parmatana.—Palpi grayish brown. Head brownish. Fore wings brown, varied with darker brown; with a white dorsal patch near the middle of inner margin, dotted with a few dark brown dots. The costa from the middle to the tip has *four white spots*, each of which has a dark brown streak or spot in the centre; the two nearest the base terminate in faintly violet-hued streaks, the external one running to the hind margin beneath the tip, and the internal, which is double, and fainter than the exterior one, terminates in a slightly silvery-hued ocelloid patch, having a pale ochreous centre and two black streaks. Hind wings dark fuscous.

AMORBIA.

The fore wings are as broad at the base as across the inner angle; the costa very abruptly arched at the base, and thence slightly and regularly arched to the apex, *and with dispersed tufts of scales on its surface;* tip obtuse; hind margin rounded; inner margin straight. The disk is rather narrow, extends beyond the middle of the wing, is without secondary cell, and with subcostal vein arched, the median straight; the apical nervule is *furcate near the tip;* the medio-posterior nearly opposite the first marginal nervule. In the hind wings the costal and subcostal veins are distinct; the subcostal vein is furcate external to the origin of the discal vein, with branches *separating from their origin.* Just interior to the origin of the discal vein *arises a subcosto-marginal nervule;* the discal vein is much curved, and the medio-discal nervule arises from the median vein, almost at the point of divergence of the two superior branches.

Head smooth. *Without ocelli.* Face nearly naked, with a thin horizontal tuft between the antennæ. Antennæ setaceous. Palpi exceed the face by about one half their length, ascending at the base, and rather thick and porrected, *beaklike;* densely clothed with rather appressed scales, convex above, and rather concave below; terminal joint *with its base concealed by its covering,* but slender when denuded, and about one half less long than the middle joint. Tongue about as long as the palpi.

A. humerosana.—Palpi grayish fuscous. Head gray. Fore wings gray, with minute tufts of blackish scales scattered over the surface. The inner margin is pale ferruginous from the base nearly to the inner angle, where the hue becomes somewhat diffuse, and is joined by an oblique dark gray central fascia from the middle of the costa. Hind wings rather dark fuscous.

CRŒSIA? Hübner.

Fore wings scarcely as broad toward the base as across the inner angle; costa arched toward the base, slightly arcuated from the basal curvature to the tip; *with single elevated scales scattered over the surface of the wing;* hind and inner margins nearly straight, inner angle rounded. The disk is rather narrow, extends beyond the middle of the wing, without secondary cell, and both the subcostal and median veins slightly curved; the apical vein is *furcate,* and the medio-posterior arises at a point opposite the middle of the space between the first and second subcosto-marginal branches. In the hind wings the costal and subcostal arise from a *common stalk;* the branches of the subcostal *separate from the point of origin,* with an oblique, angulated discal vein from the same point; the medio-discal nervule arises from a very short stalk placed at the point of separation of the two superior branches of the median vein.

Head smooth. *With small ocelli.* Face nearly naked, *with a rather long thin horizontal tuft on the forehead.* Antennæ setaceous, minutely ciliated in the ♂, pubescent in the ♀. Palpi exceeding the face by much more than one half their length, ascending toward the base, porrected *beadlike*, densely clothed with scales, which are rather spreading above; upper edge convex from the middle, beneath nearly straight; terminal joint *smooth*, distinctly separated from the terminal scales of the middle joint, which conceal its articulation, *less than one half as long as the middle joint.* Tongue about one half as long as the labial palpi.

C. ? reticulatana.—Palpi reddish. Head yellow. Fore wings bright deep yellow, beautifully and minutely reticulated with reddish orange. At the base of the inner margin is a small dark red spot, and on the middle of the margin is a triangular dark red dorsal spot, from which proceed two diverging narrow bands of the same hue, somewhat varied with reddish orange, one to the basal third of the costa, the other to the apical third, and crosses another narrow band of the same hue, in the middle of the wing, coming from a dark red spot near the middle of the costa, and is extended to the inner angle. Hind wings straw-color. *Tongue wanting.*

Male? Fore wings straw-color, striated with reddish orange rather than reticulated. The markings are essentially the same as in the ♀; their color is purplish red, and enclose reddish orange dots. Hind wings white. *Tongue one half as long as the palpi.*

C. ? sulfureana.—Fore wings shining pure yellow, slightly striated with reddish orange; from the middle of the inner margin two irregular reddish orange lines diverge, and throw off short lateral branches in their course; one runs to the basal third of the costa, the other towards the tip of the wing, where it is connected with small spots of the same hue on the costa, and a stripe along the inner margin. Hind wings whitish.

PŒCILOCHROMA ? Stephens.

The fore wings are rather narrow and long; costa regularly arcuated; tip rather acute; hind margin slightly excavated beneath the tip; inner margin nearly straight. The disk extends rather beyond the middle of the wing, *with a rather large secondary cell;* the medio-posterior nervule arises opposite the basal end of the secondary cell. In the hind wings the branches of the sub-costal are *connivent;* discal vein curved, and a curved medio-discal arising from the median vein, the upper nervule of which *is forked remotely* from the origin of the medio-discal.

Head rather smooth. With ocelli. Face smooth, with a slight horizontal tuft on the forehead. Antennæ setaceous, pubescent beneath. Palpi exceeding the face by more than one half their length, ascending from the base to the middle, and thence porrected; very broad in the middle, and arched above; the middle joint thickly clothed with scales, which form a tuft beneath towards the tip; the terminal joint slender, cylindrical, smooth, and almost concealed in the hairs of the middle joint. Tongue extends rather more than one half the length of the labial palpi.

P. ? dorsisignatana.—Palpi and head brown. Fore wings chocolate brown, grayish brown along the inner margin, beneath the fold, and nearer the base than the inner angle is a semi-oval chestnut brown dorsal spot extending a little beyond the fold. In the middle of the wing is a broad, rich brown, oblique fascia, beyond which the wing is somewhat varied with grayish. Costa near the tip slightly striated and grayish. Hind wings with pale shining fuscous.

P. ? similiana.—Palpi and head dull reddish brown. Fore wings somewhat brighter reddish brown, with an obliquely placed deep chestnut brown dorsal demi-band, nearer the base than the inner angle, and extended to the disk, convex internally and concave externally, and with a small quadrate patch on the inner margin, near the inner angle. Near the hind margin are two subterminal ferruginous lines. Hind wings dark fuscous.

This insect may be the ♀ of the previous species.

MONOSPHRAGIS.

Fore wings with a *closely appressed*, *broad*, *rounded fold* at the base in the ♂. The costa is regularly arcuated from the base to the tip, which, as well as the hind margin, is rounded. The disk with a secondary cell; apical vein simple; the medio-posterior nervule arises at a point nearly between the origins of the first and second subcosto-marginal nervules. In the hind wings the branches of the subcostal vein are *connivent at their bases;* discal vein arched; the upper branch of the median is *forked near its middle*, and a curved medio-discal branch arises almost immediately from the median, behind the bifurcation of the upper branch. Thorax crested.

Head scarcely smooth. With ocelli. Face very slightly tufted in the middle. Antennæ *rather thick*, *with joints closely set and roughened.* Palpi *equal to the face*, arched, cylindrical, covered with appressed scales; middle joint thickened beyond the middle, and somewhat truncate; basal joint *with hairy scales*, rather longer than the apical, *which is minute*, smooth and placed in the middle of the second joint. Tongue equal to the palpi in length.

M. otiosana.—Dark brown, with a purplish hue. Fore wings with a rather large quadrate, very pale yellow dorsal patch, and a brownish white ocelloid patch, containing three black points. Costa near the tip, with a few whitish striæ, containing a brown central point. Tip and margin beneath it ferruginous. Hind wings dark fuscous.

LOZOPERA ? Stephens.

Fore wings rather narrow; costa arcuated, rather abruptly near the tip of the wing; tip rather acute; hind margin obliquely truncate; inner angle rounded, *with the cilia produced;* inner margin *excavated* behind the inner angle, at the end of the submedian vein and thence to the base rounded. The disk is broad behind, without secondary cell, with the discal vein obliquely inclined to the base; apical vein simple; the two superior nervules of the median vein *arise from a common* point, and the medio-posterior nervule *is not remote*, and is opposite the second marginal nervule. Hind wings rather elongate, *not broader than the fore wings;* costal and subcostal veins *distinct to the base;* subcostal vein *forked in the apical third of the wing*, with the discal vein *extremely oblique*, arising from the subcostal *in the basal third of the wing;* the disco-central arises somewhat on the median side, on an oblique stalk; median three-branched, the medio-central and disco-central equidistant from the medio-superior nervule.

Head smooth. *Without ocelli.* Face smooth (?). Eyes round, moderately prominent. Antennæ slender, setaceous. Palpi exceed the face by more than one half their length, rather slender, curved and porrected; the middle joint *sub-tufted beneath*, with the hairs directed forward, and *thinly clothed above;* terminal joint placed above the tuft, slender, short, smooth. Tongue not more than one half as long as the labial palpi.

L.? angustana.—Palpi and head white, tinged with yellowish. Fore wings pale greenish yellow, with three greenish brown streaks along the costa, the longest at the base, one about the middle, and one near the tip; a dark greenish brown dorsal patch about the middle of inner margin, and a greenish fascia from the *inner margin at the base*, inclines to the middle of the costa, and not extended to it. Hind margin with a few terminal dark brownish spots. Hind wings whitish, tinged with fuscous.

ARGYROLEPIA ? Stephens.

Fore wings with the costa regularly arched; tip obtusely produced; hind margin oblique and slightly concave beneath the tip; *cilia of the inner angle produced.* The disk ample, with the discal vein obliquely inclined; apical vein simple; medio-posterior scarcely remote from the penultimate branch. Hind wings with the subcostal vein *forked in the apical third*, with the discal vein *oblique but curved at its origin*, midway between the base of the wing and the fork of the subcostal; the disco-central on an oblique stalk, further from the medio-superior than the central is from the latter.

Head smooth. Ocelli very small, scarcely perceptible. Antennæ setaceous, pubescent. Palpi exceeding the face at least two thirds their length, porrected, rather slender; basal joint curved, and *equal to the face;* middle joint slightly hairy toward the tip; apical joint minute, ovate. Tongue as long as the labial palpi.

A.? lepidana.—Palpi pale ochreous white. Head ochreous. Fore wings ochreous, somewhat silvery white at the base, with a broad, reddish, fawn-colored central fascia *parallel with the hinder margin*, varied somewhat with dark brown on the inner margin. This is edged externally by a somewhat silvery ochreous line, which is furcate above the inner margin, enclosing an ochreous spot. Apical portion of the wing reddish fawn-color, with a few black atoms in the middle of the wing. Hind wings dark fuscous.

CŒLOSTATHMA.

Fore wings with the costa at the base arched, and thence slightly to the tip; apex acute, hind margin slightly concave. The disk is placed in the middle of the wing, with the subcostal and median veins arched, rounded behind, and extending scarcely more than one half the length of fore wings. The subcostal vein has *two marginal nervules from the disk*, and the apical branch *gives rise to another near its origin, exterior to the cell*, and becomes *furcate behind the tip.* Hind wings not broader than the fore wings; costal and subcostal veins distinct, with the latter *furcate rather remote* from the discal vein, which is curved, and gives rise to a medio-discal nervule, almost in contact with the medio-superior at its origin.

Head smooth. With ocelli. Face with a slight horizontal tuft, and smooth beneath it. Antennæ *plumose in the* ♂, pubescent in ♀. Palpi exceed the face by one half their length, arching to the middle of the face, thence porrected and *tapering to the apical joint;* middle joint with rather long scales from *the middle to the tip above*, and on the entire undersurface; from its clothing, broad in the middle, and almost trapezoidal; apical joint smooth, distinct and short; about as long as the basal. Tongue as long as the palpi in the ♂; nearly obsolete in the ♀ (?)

C. discopunctana.—Yellowish or luteous yellow. Fore wings with two more or less distinct brown or reddish brown lines from the costa, inclined towards the inner angle; one nearly central and often shaded exteriorly, the other near the hind margin. Costa with four blackish brown dots near the tip, and a minute *black point on the disk.* Hind wings pale yellowish. The female is usually darker colored than the male.

SMICROTES.

Fore wings regularly arcuated from the base to the tip; tip scarcely acute, hind margin obliquely rounded; inner margin rounded. The disk is long and narrow, and extends to the apical third of the wing; discal vein oblique. The wing structure of fore wings as usual; medio-posterior remote from the penultimate branch; cilia of the inner angle somewhat produced. In the hind wings the costa is *emarginate* or *excavated* a little exterior to the middle, and along the hind margin; not broader than the fore wings. The costal and subcostal veins are distinct to the base, *the latter forked near the tip of the wing;* discal vein arising near the middle of the wing, and curved; medio-discal on a very short stalk; the two superior branches of the median from a common point.

Head scarcely smooth. Ocelli small. Face narrow, rough. Antennæ approximated setaceous, pubescent. Palpi exceeding the face scarcely one-fourth their length, slightly curved, rather slender, and somewhat hairy; middle joint truncate, somewhat thickened at its end with scales; apical joint slender, apparently very minute being almost concealed by the terminal scales of the middle joint, but when denuded, at least one-half as long as the middle. Tongue slightly longer than the palpi.

S. peritana.—Brownish ochreous. Fore wings paler on the costa at the base than the inner margin; with a brown central fascia inclined to the inner angle from about the middle of the costa, edged internally with pale yellowish; this band is usually rather broad, but sometimes narrow. Near the tip, on the costa, is a dark brownish spot, with a line extending from it to the inner angle. Costa with a few minute brown points. Hind wings rather dark grayish.

EXARTEMA.

Fore wings with the costa regularly arched; tip obtuse and rounded; hind margin rounded, very slightly oblique; disk with secondary cell. Hind wings rather broader than the fore wings; *obtusely angulated on the hind margin*, opposite the median nervules; inner margin *deeply and sharply excised, with a cylindrical appendage along the inner margin from the base, the lower portion of which is free;* the branches of the subcostal are connivent; medio-discal arising on a short stalk at the bifurcation of the two superior branches of the median; discal vein curved.

Head rough. With ocelli. Tufted between the antennæ. Face smooth, rounded. Antennæ setaceous, pubescent beneath. Palpi *arched, applied to the face* with the tips equal to the base of antennæ; with rather hairy scales beneath from the base to the tip of middle joint, which is slightly scaly at the tip above; terminal joint minute, ovate, distinct and smooth. Tongue about equal to the palpi.

E. nitidana.—Palpi yellowish white, terminal joint fuscous. Fore wings dull sordid crimson, with a pure brown basal patch divided into two portions, one a streak above the median vein, the other a patch beneath it, slightly varied with reddish brown. The central fascia is pure brown, with an irregular internal edge, and externally subdivides into three broad streaks or projections; that on the inner margin truncate at the inner angle, one in the middle of the wing, and one near the costa acute. Slightly connected with the upper streak, is a curved one of the same hue, varied with reddish brown, running to the middle of the hind margin; all these streaks are bordered with ochreous. The costa is streaked with reddish brown. Hind wings dark fuscous.

E. permundana.—Palpi dull yellow, apical joint fuscous. Fore wings with a large dark brown basal patch, varied with testaceous or yellowish. The central fascia is dark brown, varied with testaceous, and is separated from the basal fascia by a yellowish band, containing dull silvery scales, or a tarnished silvery band; exteriorly, the fascia throws off three more or less distinct, short, rounded projections, two near the middle of the wing, and the other at the inner margin, with a triangular patch exterior to the latter; from the costa, near the tip, is an oblique, dark brown band, varied with testaceous scales, to the hinder margin, beneath the middle. The interspaces between these markings is filled up with yellowish, somewhat silvery-hued, or with dull, tarnished silvery hue, and the markings are edged with yellow. Costa with yellowish white streaks, with central dark brown streaks. Hind wings dark fuscous.

The larva binds together the terminal leaves of Spiræa. It is pale green, touched with yellowish at the junction of the segments; head and shield black. The larva may be taken in the middle of June.

E. versicolorana.—Fore wings yellowish, varied with short, dark brown striæ, and *shades* of the same hue, overlaid with testaceous scales. In the middle of the wing is a dark brownish shade, indicated on the middle of the costa by a nearly square spot. The oblique subterminal band is well indicated, does not reach the costa, and the cilia opposite to it on the hind margin *are dark brown.* At the tip is a dark brown spot, and the cilia of the tip likewise dark brown. Hind wings fuscous.

E. inornatana.—Head and thorax ochreous brown or dark reddish brown. Fore wings whitish testaceous or brownish testaceous, somewhat striated, but without distinct bands. The costa is ferruginous, with rather faint, pale colored streaks. The apical portion of the wing is either brownish ferruginous or testaceous brownish, with one or two faintly indicated lines. Hind wings reddish fuscous or yellowish white, and slightly fuscous along the hind margin.

The larva has the head and cervical plate colored black. The body, which is white at first, becomes pale green, with rather pale, reddish brown bands produced on the vascular line, and striped on the sides with the same hue; head, dark reddish brown. It inhabits, in May, a web woven between applied leaves of white oak. The pupa is contained in a flocculent silky cocoon, and is *without dorsal spines.* The pupa case remains in place after the escape of the imago, which appears about the middle of June.

E. fasciatana.—Fore wings with a blackish brown basal patch and a broad, nearly square, central fascia of the same hue, separated by a broad silvery white band, having a few dark brown dots on the costa, and a single line of the same hue from the inner margin to the middle of the wing. The oblique band near the tip, runs from the costa to the inner margin, is dark brown, overlaid with testaceous scales, and is bordered on each side by a stripe of dull silvery scales. Costa with geminated white streaks from the middle to the tip. Hind wings dark fuscous.

Variety ?—Rather paler brown than the above, with similar markings, but the white band, near the base of the fore wings, is tinted with pale brownish, and is striated with dark brownish.

Hedya Hübner.

Fore wings, costa regularly and slightly arched; tip rather acute, but not produced; hind margin slightly concave, inner margin rounded; disk with secondary cell. Hind wings broader than the fore wings; apex obtusely produced; hind margin concave beneath the tip. The branches of the subcostal are connivent; the upper branch of the median vein *is forked, rather remotely,* from the insertion of the medio-discal nervule, and the discal vein is nearly straight.

Head rough. Ocelli small. Antennæ setaceous, pubescent beneath. Palpi equal to the face, slightly ascending; middle joint thickened with scales towards its end, particularly beneath, truncate; terminal joint slender, drooping, minute, and is seen in the lower part of the scales of the middle joint. Tongue rather longer than the palpi.

H. Pyrifoliana.—Fore wings with a dark brownish gray basal patch; broadly white in the middle of the wing, with the patch produced towards the apex, and sometimes bluish pale gray and indistinct. Exterior to the middle of the wing are dull, bluish, transverse streaks; and near the apical portion of the hind margin and the inner angle, are short black streaks or spots. The apical portion of the wing has, more or less, the hue of the base. Costa with obscure streaks from the middle to the tip. Hind wings fuscous. In ornamentation, this insect is much like E. **fasciatana.**

The larva is of a dull amber-brown color, with papilliform points, somewhat darker; head and shield blackish brown. It inhabits the pear and plum tree. One of the leaves of a terminal shoot is cut off at the base of its leaf-stalk, lined with silk, and folded; other leaves are attached to this, and it is used even after it has become dead and blackened, as a place of concealment. The larva may be taken in April and May, and becomes an imago early in June.

H. Scudderiana.—Fore wings with a rather small dark brown basal patch, with the edge obliquely inclined to the base, and rather wavy, broadly white in the middle, and somewhat mottled with brownish; dark brown and white in the apical portion. Along the edge of inner margin is a row of dark brown dots from the base. The costa geminated with yellowish from the middle to the tip. Above the inner angle, is a white ocelloid-like patch, encircled irregularly with bluish. Hind wings fuscous.

From S. H. Scudder, Mass.

BACTRA ? Stephens.

Fore wings with the costa regularly arched, rather abruptly near the tip, which is acute, but not produced; hind margin *truncate* from the tip, inner angle rounded, inner margin nearly straight. Wing structure as usual; disk rather narrow, without secondary cell. Hind wings broader than the fore wings, hind margin regularly curved from the tip to the basal angle; branches of the subcostal connivent; discal vein curved; the medio-discal, and the two superior branches of the median, from a common point.

Head scarcely smooth. With ocelli. Antennæ setaceous, pubescent. Palpi very little exceeding the face, cylindrical, slightly ascending; middle joint thickened with scales beyond the middle; apical joint very minute. *Tongue wanting.*

B. ? argutana.—Fore wings ochreous, tinted with reddish brown, and striated with the same hue toward the base, and with dull purplish from the middle to the tip. Above the inner angle is an indistinct ocelloid patch, containing two black spots, with a dull, silvery streak exterior to them, and the wing varied with purplish interiorly to it. The costa is streaked with pale ochreous with dark centres, the third from the tip giving rise to a very oblique purplish streak. Hind margin more or less yellowish behind the ocelloid patch and at the tip. Hind wings fuscous or pale ochreous.

I am well assured of the accuracy of my notes, and yet I find the record of the larval state of this insect quite anomalous: at least, the imagos produced from *three larva*, which one would declare distinct, are not to be distinguished from each other. One rolls the leaves of *witch hazel* into conical cornets, and binds the rolls with strong and numerous bands. It prepares for pupation by turning down a portion of the leaf. Its body is concolorous reddish, except a few spaces between the anterior rings, where it is pale brown; shield reddish; head pale brown. Another feeds on the leaves of *sumach*, rolling a leaf spirally in the first place, securing the rolls with bands, and afterwards joining the neighboring leaves to the one first inhabited. Its body is of a dirty greenish color, with obscure whitish papilliform points. Head whitish, or with a pale brown head and green body, striped with dark green. The third feeds on the leaves of *black thorn* and *elm*, *drawing them into a fold* from the base, and binding it to the midrib. It is concolorous lemon-yellow, with a yellowish brown head. The differences in color may be reconciled by the supposition, that the descriptions represent different periods in larval life; but if my notes are correct, it is difficult to account for the difference in habits, as shown in the third individual, which agrees in this respect with the larvæ of the genus **Anchylopera.**

ENDOPIZA ? Guenée.

Fore wings with the costa regularly arcuated; tip obtuse and rounded; hind margin rounded, as well as the inner margin. Neuration normal; disk with a secondary cell. Hind wings rather broader than the fore wings; costa slightly concave from the middle; hind margin slightly concave; subcostal nervules connivent at the base; discal vein curved, with the medio-discal arising from the bifurcation of the two superior branches of the median.

Head and face rough. With ocelli. Antennæ setaceous. Palpi slightly exceeding the face, slightly ascending, truncate; middle joint slender and cylindrical towards the base, thickened with scales at the tip, so as to be decidedly truncate; terminal joint minute, ovate. Tongue about as long as the labial palpi.

E. ? Viteana.—Antennæ, basal half pale brownish; apical half dark brown. Fore wings blackish brown, or purplish dark brown, from the base to the middle, and reddish brown or dull ochreous thence to the tip. Near the base is a somewhat curved slender band, and from the middle of the costa a central, oblique, dark brown, or dark reddish brown fascia, widening toward the inner margin, from which it is obliquely cut off by the paler color of the wing, leaving a small triangular spot on the margin near the inner angle. In the middle of the apical portion is a large roundish reddish brown spot, and the costa towards the tip is geminated with pale ochreous. Hind wings fuscous.

The larva feeds on the fruit of the grape in September; a silken gallery is attached to the external opening in the fruit. Its head is dark brownish; shield blackish; body immaculate dark green. It may likewise be taken on the fruit of the *wild raspberry* in July. The individual feeding on the grape undergoes transformation by weaving a cocoon on the surface of the ground, and that from the raspberry under an excised and turned down portion of a leaf. This, however, may not be its normal habit.

Another individual, whose imago is included in the description of Viteana, and is not distinguishable from it, except by the reddish brown hue of the apical portion of the fore wings, and the general purplish brown hue, differs in habits from it. It lives in a silken gallery, woven in a closed or applied leaf of sassafras; usually the leaf is folded along the face and united with the midrib. It is extremely active and agile in its motions, and weaves with great rapidity. It may be taken early in July. The pupa is contained in the folded leaf, without any cocoon, the tail being attached to a slight web. The imago appears in the latter part of July.

E? agilana.—Fore wings dark brown, sprinkled with pure brown from the middle to the tip; at the base is a dull metallic bluish spot, and about the middle of the disk a broad, short stripe from the costa, and streak from the costa at the end of the disk, of the same hue. At the inner angle is an indistinct ocelloid patch with an exterior streak and two internal spots of a dull metallic bluish hue. Costa geminated with yellowish from the first costal stripe. Hind wings dark fuscous, white along the costa.

CARPOCAPSA Treib.

Distinctively characterized by the large ocelloid patch at the inner angle of the fore wings, which are much wider across the inner angle than toward the base; tip usually acute, hind margin slightly concave, (Pomonella has neither of these traits;) disk rather above the middle of the wing, rather narrow, with a secondary cell; apical vein simple. Hind wings slightly broader than the fore wings, nearly ovate; neuration normal, subcostal branches connivent, the two superior median nervules *on a very short common stalk*, medio-discal on a short, erected stalk.

Head rather rough. With ocelli. Antennæ setaceous, pubescent. Palpi exceeding the face, ascending to its middle, rather slender, clothed thickly with rather appressėd scales; apical joint rather stout, small, ovate and smooth. Tongue as long as the palpi.

C. Pomonella *Linn.*—Fore wings umber brown, with a slight coppery hue, varied or marbled with pale grayish. The ocelloid patch is very large, of a fine, deep brown color, with an external and internal streak of bright metallic-hued coppery scales, the latter having internal patches of black scales. Hind wings fuscous, with a coppery hue.

I can perceive no difference between this and the descriptions of the European representative of this species. The larva of both is of a pale pinkish color, and feeds on the fruit of the apple and the pear. The species has probably been introduced from Europe into the United States.

IOPLOCAMA.

Fore wings with a rather large, distinct ocelloid patch; nearly as broad *at the base* as across the inner angle; costa regularly arched from the base; tip obtuse; hind margin obliquely rounded; apical vein simple; disk rather above the middle of the wing, with secondary cell, median vein straight, subcostal curved towards the end. The hind wings are broader than the fore wings, ovate; external margin slightly dilated in the middle; subcostal branches connivent; discal vein arched; medio-discal on a short erect stalk and the superior branch of the median vein *furcate about the middle.*

Head rather smooth; with ocelli. Face broad. Eyes rather small, prominent. Antennæ setaceous, *with very minute ciliations.* Palpi exceeding the face by rather more than one half their length, slightly ascending and porrected, *very thickly haired beneath,* with a distinct tuft to the basal joint; middle joint with the hairs towards its tip, longer than the rest, and directed forward, almost smooth above; apical joint minute, and almost concealed in the terminal hairs of the middle joint. Tongue scarcely as long as the palpi.

I. formosana.—Fore wings dark brownish, with a most beautiful bluish-violet reflection, when viewed from the hinder margin to the base, irrorated with ferruginous brown. The costa toward the tip, as well as at the base, ferruginous-brown, the former streaked with dull silvery. Ocelloid patch, rather large, with two black central streaks and an internal dull silvery streak; the external silvery streak is connected with the third costal streak, which is extended obliquely to it. The costa from the middle to the tip, is geninated with yellowish. Hind wings dark fuscous.

From Mr. Kennicott, Ill.

This group of insects is probably the most difficult, in a systematic point of view, and the least interesting family in the order of Lepidoptera. The impression I have derived from the study of it, induces me to believe that it is owing chiefly to the artificial system by which it is at present interpreted, and which I have endeavored to follow in this paper. Numerous families, or so-called families, have been arbitrarily instituted on the most trivial and untenable characters, some of which are only sexual peculiarities, while ornamentation appears to be a far more important element than structure, in the diagnoses by which they are characterized. Such an arrangement possesses a certain amount of convenience, inasmuch as it frequently enables the student or inquirer to limit the probable number of genera to which an insect he may wish to classify may belong. This, however, is its total significance, and even in this respect it is often deficient and deceptive. This is a system of convenience and not of nature, which works on categories of structure and re. cognizable conceptions or ideas.

In my own view, from which, doubtless, many naturalists will dissent, ornamentation is purely an individual characteristic of species, and although in general sufficiently constant, subject to a degree of variation in the same species that is often very considerable. Why should that which is unstable in species receive the stamp of scientific approval in the recognition of superior groups, instead of that which is constant and fixed, which is more or less indicative of modes of life, which is the expression in the imago of those categories of thought that we designate genera and families? I cannot perceive why it should be preferred, when I recall the wonderful fertility in structural invention which characterizes every natural family, and the logical connections that exist between all those groups of species composing its various genera. If the specific conception is the same in the preparatory states, and the structure of the various imagos that result is nearly identical, differing in some trivial peculiarity, perhaps, to which we are unable to assign any significant value, would it not be more scientific and convenient, more natural and philosophic indeed, to regard such individuals as forming a distinct group in the genus, to which they are evidently so intimately related, regardless of peculiarities of ornamentation?

What would be thought of that system in anthropography which separated men of the same race upon a long or a short nose, a large or small ear, thin or thick lips, or wide or narrow shoulders? I am not prepared to assert, that a principle like this has been introduced into the system which represents the present arrangement of this family, but when one recalls its comparative *poverty* in generic characters in the imago, or otherwise the extremely close relationship indicated in the diagnoses of many of its genera, the probability of something similar to it having existence is at least suggested to the mind.

It would be well if entomologists would cultivate just and philosophic conceptions respecting the nature of the various groups at present recognized in our systems. No other department of Natural History offers, probably, equal facilities for observation and determining with accuracy the limits of generic and specific cycles. The mind, however, must be disabused of the fallacious notion that the imago is the most important part of species; that it is, indeed the species, or that classification can be truly and properly made on this basis alone. Perfect insects are easily arranged systematically upon a consideration of their *entire structure,* its general agreements and special differences, but there are considerations more important than these involved in the idea of species.

The "imago" is no more the *species* which it represents as an individual, than the principal *noun* of a grammatical sentence is the *idea* which may be conveyed to our mental perceptions. Each is necessary to the other, each incomplete without the other, and when a hiatus exists in either case, we are placed simply in a region of conjecture, respecting the significance connected with the representative presented to us. We have an object, but no idea. The noun and the imago may be well known to us, but until we have followed them through all the collateral terms in which they exist as the materials of thought, we cannot duly value the conceptions which may be connected with them.

The advocates of the Darwinian Theory of the origin of species would have us believe that species is an *abstraction;* that it represents nothing ideal; that in nature nothing but individuals exist, and in these must we look for the characteristics of species. The entire superstructure of reasoning on which the theory is built, is one that admits what is material in the specific group, probably because it is obvious to the senses of every one, but ignores the existence of that which is immaterial, intellectual, *spiritual* in every true specific creation, and which is to it as the soul to the material body of man; that which distinguishes the vital machine from mechanical inventions or imitations, created by the conceptions of the human mind. Nor does this belong to the imago alone, but is written in vital characters in the various transitional forms which belong to each species, in their organs, and their acts and manifestations of life, and intelligence or instinct. It is this, the definite conception, that casts each individual of a species in the same organic and instinctive mould, that cannot change. Individuals of the same species may change in ornamentation, but never in structure, unless as the consequence of amalgamation with another species, or an occasional abnormal modification, which is individual, not specific, and disappears with the individual. The creative fiat involved in the life of every species and in its conditions, remains unalterable, because change in that which has an organic, vital and spiritual significance cannot take place without destruction to the species.

The supposition that " profitable variations of structure" may be initiated in the cell action of the reproductive system, in order that organisms may more successfully maintain an overestimated " struggle for existence," is simply a monstrous physiological fallacy and assumption. If we suppose amalgamating influences to be inoperative, where do we perceive the evidences of it? The vegetable perpetuates itself by a germ, which already has its type distinctly impressed on it before the character of its architecture is developed by the effect of influences under which it is gradually worked out, cell upon cell, in one season or through a long series of years. In the animal, the reproductive action is most probably, nay, there are well ascertained facts which directly teach us that it is a simple process of *continuous growth in species*. Thus species have not a transient existence, but rather a terrestrial immortality. Individual life is ephemeral, specific life co-eternal with the existence of the conception producing the representative forms. Individual lives are like the leaves of a deciduous tree, and having performed their functions are constantly shed, while the source of them continues to spread itself through space and time, until its appointed period has ended.

Under this simple view of species, supported alike by reason and all carefully collated physiological facts, how the study of the humblest branch of Zoology is ennobled. It acknowledges the existence in nature of a Principle as a creative power, similar to our own minds. It deals with living thoughts, and seeks to represent, through many misconceptions and difficulties, the logical sequences existing amongst them, and to seize the hidden meanings which appeal to our intelligence, in the ponderous volume on which they are inscribed.

NOTE.—The reader is requested to make the following corrections:—

In Paper 4, May, 1860, p. 160, for *Nomia*, read *Chrysopora*. Nomia is already in use to designate a genus of Bees.

In Paper 5, June, 1860, p. 219, line 21, for *graduation* read *gradation*.

September 4th.

Vice President BRIDGES in the Chair.

Twenty-seven members present.

The following papers were presented for publication: "Description of a new species of Astroscopus, *Brev.*, in the Museum of the Academy of Natural Sciences of Philadelphia, by Charles C. Abbott."

"Description of a new species of Chatoessus, *Cuv.*, from New Jersey, by Charles C. Abbott."

And were referred to a Committee.

September 11th.

Vice President BRIDGES in the Chair

Fifteen members present.